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BRITISH RURAL SPORTS.

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Yours truly
N. H. Walker

LONDON. FREDERICK WARNE & Co

BRITISH RURAL SPORTS;

COMPRISING

SHOOTING, HUNTING, COURSING, FISHING, HAWKING, RACING, BOATING, AND PEDESTRIANISM.

With all Rural Games and Amusements.

BY

STONEHENGE,

Editor of "The Field," Author of "The Greyhound."

Fourteenth Edition, Profusely Illustrated,

RE-EDITED THROUGHOUT, WITH NUMEROUS ADDITIONS.

BY THE "FIELD" STAFF.

London:

FREDERICK WARNE AND CO.,

BEDFORD STREET, STRAND

PREFACE TO THE TWELFTH EDITION.

In the year 1855, when I undertook to write a *Manual of British Rural Sports*, the knowledge necessary for that purpose had been obtained, as I then stated, in the intervals of leisure afforded me while practising a laborious profession for twenty years. Since that time a corresponding period has been occupied exactly in an opposite manner, that which before was my relaxation having become the business of my life—as Editor of the *Field* newspaper. Consequently, in the several editions of this book which have since been published, I have been enabled to correct numerous mistakes which from my limited experience had crept into the text, and to make large additions to the already long list of Sports and Pastimes. In the interval, amateur Pedestrianism and the various forms of Athletic amusements have been developed in a marvellous manner. The games of Croquet and Lawn Tennis have become fashionable. Canoeing has come into vogue; and that wonderful machine, the Bicycle, has been invented and generally introduced among all classes. Dog Shows have led to a more precise description of the various breeds of that animal, and have enabled me to describe their points with the aid of careful illustrations which may be fully relied on; and field trials of sporting dogs have been instituted; but, I regret to state, without such a permanent success as to warrant my giving any notice of them here.

The recent invention of the "Choke-bore" has so greatly improved the powers of Shot Guns that I have largely dilated on its nature and effects, and a full *résumé* of the trial held at Wimbledon under my supervision in April last, with a view to test its merits, is embodied in the chapter on Shot Guns—bringing that department fully up to the level of the day.

The chapters on Yachting, Canoeing, Bicycling, Athletics, Football, Tennis, Lawn Tennis, and Rackets, are written by members of the *Field* staff who, from the special nature of their duties, are more conversant with these departments than myself, and, indeed, may be considered the highest

authorities on them now extant. To Mr. Robert Chambers, of Edinburgh, my thanks are also due for the excellent article on Golf—in which, from its national character, he takes so great an interest as to volunteer his aid.

The assistance thus afforded me will, I hope, be found to maintain the reputation of my *Manual of British Rural Sports* in the high position which the public has for twenty years accorded it—and for which I beg to tender them my warmest thanks.

It is almost needless to state that the publishers have again ordered an entire recomposition of the book on larger paper and in a more legible type.

STONEHENGE.

PUTNEY, *October*, 1875.

PREFACE TO THE FOURTEENTH EDITION.

SINCE the year 1875, when I last revised this *Manual of British Rural Sports*, an important trial of the new Schultze gunpowder has been carried out by myself, the results of which are given in the present edition, together with an account of the latest improvements in the guns intended to use it or its rival, the old black powder.

The chapters on Wild-fowl Shooting and Yachting are almost completely rewritten by gentlemen who are high authorities on each subject.

The chapters on Cricket, Football, and Lawn Tennis are also entirely rewritten, the last embodying the new laws lately published by the combined M.C.C. and A.E.C. and L.T. clubs. The tables of athletic "times" are likewise reconstructed, introducing the extraordinary long-distance performances of O'Leary and his competitors, which are quite a novel feature in that department.

In addition, several new engravings have been added, and it will thus be seen that no effort has been spared either by myself or my publishers to keep this *Manual*, which is practically without a rival, up to the level of the year 1878.

STONEHENGE.

PUTNEY, *September*, 1878.

INTRODUCTORY REMARKS.

The term *Rural Sports* usually comprehends all those out-door amusements in which man either pursues wild animals for sport, or competes with an antagonist in racing, by means of the horse, the boat, or his own unaided powers, or indulges in manly games of skill, or in artificial modes of locomotion—like swimming, skating, riding, or driving. The love of sport appears to be inherent in the breast of man, for from the earliest ages we have records of the chase; and whether in the forests of America, or the squalid streets of our manufacturing towns, the same taste is displayed, though, necessarily, shown in very different ways. Thus, while the Red Indian employs nearly his whole life in the pursuit of the deer, the buffalo, or the bear, the cotton-spinner of Manchester can only spare time for an occasional rabbit-course at the Pomona Gardens, or perhaps a boat-race, or pedestrian match; nevertheless, the desire is equally implanted in each, and is peculiarly strong among the natives of the British Islands. Differing in all other respects, as do the English, Scotch, and Irish, they yet seem all to unite on this common ground, and all to enjoy with equal zest the sports of the field. This is the more remarkable in comparing the Irish and Scotch, since their characters are, in most respects, so widely different; for though the Irishman is more like a Frenchman than a Scotchman in most points, yet there is one bond of union between him and his northern neighbour which nothing seems able to break, viz., **their mutual love of field sports.**

No one can doubt for an instant the utility and importance of out-door amusements in promoting health, and this alone ought to be sufficient to cause their encouragement. In an age like the present, when in a struggle for precedence in the senate, the bar, or the haunts of commerce, time is considered as of equal value with money, it can scarcely be wondered at, that many of the competitors in the race lose health, both of body and mind. Nothing enfeebles and lowers the bodily and mental tone more than an entire giving up of all the energies to one single pursuit; the overworked lawyer or merchant, however, has only to bestow an occasional day upon any one of the various sports within his reach and he speedily recovers himself, and instead of losing way in the course which he is pursuing, he is enabled to do more than make up the lost time which his absence has occasioned, by the increased vigour that his change of scene and occupation has given him. This is so well understood in London, that many of our first merchants make a regular practice of devoting one or two days a-week to some kind of out-door amusement. Some take to hunting, others to shooting; others, again, to coursing, or to farming on the small scale; and all of these act upon the principle of unbending the bow to enable it to regain its spring, and all are attended with the same happy result in various degrees. But the health of

the individual is not the only advantage aimed at and obtained by the promotion of field sports; and this was exemplified in a very remarkable manner to Alma, Inkermann, Balaklava, and Sebastopol. Where would our officers and men have been in these dreadful fields of carnage but for the habits of daring and endurance which the manly sports of Britain have instilled into their minds from time immemorial? To those who have seen the perils of the steeple-chase, the hunting field, or I may say the *modern* cricket field—evidently sought for and encountered by the youth of this country without flinching—it can be no wonder that they have excited the admiration of their foes as well as their friends in the Crimea. It may appear absurd to compare together such apparently widely different degrees of danger, but when the stimulus to each is taken into the account the difference is not so great. We have all seen many bold but bad riders undertake to pilot a horse in a steeple-chase with the almost certain risk of being ridden over during its course; and, again, when in cricket fast bowling was becoming the fashion and before the various guards were introduced, how small was the chance of escaping serious injury in a long innings; for if bones were not broken, important organs were often seriously bruised and injured; and yet there was no flinching, until the repeated occurrence of permanent injuries necessitated the use of leg and body pads. Thus it will be manifest that these amusements not only improve the health of the people individually, but collectively they enable them, by giving vigour, courage, and power of endurance—or, in other words "pluck,"—to withstand, as a nation, the encroachments of their neighbours. In fact, they make good healthy subjects for peace or war.

But it has often been said that field sports injure the moral and religious habits of the people, and this is even more important to consider than the question regarding their effect upon the body. There is no doubt in my mind that however they may benefit the bodily and mental powers, yet if they can clearly be shown to be opposed to religion and morality, they are unworthy the support of every right thinking man. Now, in considering this important subject, it is right to inquire—first, whether they are opposed to the laws of God, or supported by them: secondly, whether they are likewise opposed to or supported by the laws of nature; and thirdly, whether, as far as we can judge by human reason, they do really aid or oppose the cause of law and order. With regard to the law of God, there can be no doubt, from many examples in the Old Testament, that the chase was permitted; and though we have no reason to conclude that it was for the purpose of sport, yet we are distinctly told that all beasts are given up to the use of man. It is clear, therefore, that if it can be established that field sports are not only pleasurable but useful to the people indulging in them, then the purpose of the Almighty is fulfilled, and the life of the animal pursued has not been wantonly sacrificed. But in this view of the case it is all important that the end and object should be a good one; there is a vast difference between "cock shying" (in which a poor cock is tied to a stake for the purpose of allowing a lot of lubberly boys to try their skill in throwing at him) and fox-hunting, in which two or three hundred men and horses and twenty-five couple of hounds are all fully engaged in foiling the artful dodges of that wily animal; and this only under certain recognised conditions, which give to the fox a clear chance of escape. Still, all pursuit of game merely for sport has an element of cruelty attending it; and it should always be remembered that this stain must be subdued, and, if possible, washed out by the many counterbalancing advantages. At all events, even though it may be granted that the pursuit of game as sport is not distinctly enjoined, or even mentioned, in Holy Writ, it may also be admitted that there is no command against it. In the early ages of mankind, as in the case of Esau, venison was sought for as food, and in that capacity it was ordered to be used; but in this country no game could or would be reared solely for food, except in very small quantities perhaps for the higher and luxurious classes of society. Few pheasants cost less than 30*s.* a brace; and it is said, though I scarcely think with truth, that three hares eat as much as a sheep. Rabbits, we know, destroy three times as much as they eat; and the only harmless kind of game, in point of cost, is the partridge unpreserved; for its congener, the grouse, is costly enough, from requiring extensive moors for its breeding and

rearing, which must be protected by a costly staff of keepers, whereas partridges are on many farms solely under the supervision of the labourers.

In the next place, let us examine into the question by the laws of nature, where the case is more clear, since all analogy tells us that we are right in preying upon our inferiors. The tiger and all the cat kind not only catch and eat their prey, but they play with it and torment it; I do not say that this justifies us in doing the like, but that nature has evidently implanted in them a love of sport, and of a most cruel order apparently. Again, many animals will only devour their prey while yet warm, and refuse to eat it when cold, or even when taken by another of their own kind. Nothing is more astonishing to the lover of nature, and the admirer of her laws, than the series of destructions and restorations which are constantly going on. The grass preys upon the ingredients of the soil, raising its materials from the inorganic condition of the mineral world to that much more complicated one of the vegetable kingdom. Next, the grass is seized by the graminivorous animal, and is digested in his complicated stomach, becoming converted into flesh; and this flesh again is torn and mangled by the carnivorous quadruped or bird, after hunting it down; or is devoured, if killed by other means, by some one of the many natural scavengers of creation in the shape of the vulture, the hyena, or the eel. But in either case the results of the digestion are again returned to the earth, to form the first step in the eternal round of assimilation, by again supplying food for some of the grasses. Thus all nature teems with examples of one class or species preying upon a lower one; and even in many cases, as in that of parasites, an interior class preying upon another much higher in the scale of creation.

The third inquiry, namely, whether, as far as we can judge by human reason, field sports do really aid or oppose the cause of law and order, is a much more complicated one, and for its correct elucidation the science of statistics must be carefully studied. On the one hand, by the indulgence of sport, we have the benefits afforded to the health of the people which we have seen that they give; we have also general contentment and happiness increased by a knowledge that the feelings and wishes of the masses are consulted by their lawgivers; and we have, in addition, the full persuasion that by preventing the indulgence in field sports resort would be had, in most cases, to the public-house, for the purpose of relieving that care-worn feeling which incessant work inevitably causes. The old adage, "All work and no play makes Jack a dull boy," is strictly true; and therefore it becomes a question what kind of play is best fitted to produce the good effect which is required. One thing is certain, that the field sports of Great Britain have been, and are still, the means of, and the cloak for, untold abuses; but, it may be answered, that this may be said of everything under the sun, however useful or beneficial it may really be; and therefore, to avoid this imputation, let us all take especial care to purge away the foul abuses, and, as far as in us lies to retain only what is true to nature, and to nature's God. If this purpose is rigidly adhered to, and the vicious grafts upon sport are carefully pruned away, then we may hope to obtain the full benefit of the scheme propounded to us by nature, unalloyed by the base additions made by the vice of man. There can be no reason why hunting or shooting should not be carried on without any drawback except the one to which I have already alluded, viz., the inherent cruelty attending upon them. Coursing, also, need have no alloy; and even racing, which, as now conducted, is perhaps more injurious to the morals than useful to the warlike purposes of the nation, may be purged of all its bad and vicious tendencies. Then, if this is possible, why should it not be done? Let our legislators look well to this, for much of our future well-being, as a people, depends upon this question. Man will have amusement of some kind, and for his bodily and mental health, in the present state of society, that amusement must be out of doors. Much has been done to destroy the evil agencies at work among us: "the Betting-houses' Act," the alteration of game laws, &c., have been useful in their several ways, but much yet remains to be done. Let it be remembered, that sport should be used and not abused, and let not the abuse of it be urged against its use. Then may we hope to see the full amount of good developed, of which this element in our social life is capable; and then may the sportsman, who is also

the legislator, lie down after his day's sport with a full conviction that he has had a share in one of those institutions of his country of which he may well be proud.

In the following *Manual of British Rural Sports*, the first part treats of "The Pursuit of Wild Animals for Sport," comprehending Shooting—Hunting—Coursing—Falconry—and Fishing. Part the Second embraces an account of "Racing in all its Branches," viz., Flat racing—Hurdle racing—Steeplechasing—Rowing to Hounds—Trotting matches—Yachting—Boat racing—Canoeing—and Pedestrianism; while the third extends over the following long list, viz., Cricket—Football—Fives—Bowling—Tennis—Lawn Tennis—Curling—Golfing—Croquet—Swimming—Skating—Horsemanship—Bicycling—and Driving. And, lastly, the fourth and fifth parts are devoted to such a description of the Anatomy, Physiology, and Diseases of the Dog and Horse, as may enable the sportsman to preserve their health, or to relieve any of the more ordinary deviations from it. In this enumeration, Pugilism, Cock-fighting, Bull and Badger baiting, are omitted, as being contrary to the laws of the land; and, to the best of my judgment, nothing is inserted which can injure the morals, or destroy that gentlemanly feeling which it should be the object of every true sportsman to encourage.

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MANUAL
OF
BRITISH RURAL SPORTS.

PART I.

THE PURSUIT OF WILD ANIMALS FOR SPORT.

BOOK I.—SHOOTING.

CHAPTER I.

PRESERVATION OF GAME.

Sect. 1.—Selection of Preserve.

In all the varieties of the chase, whether hunting, shooting, coursing, or fishing, the first requisite is, that there shall be something to pursue. Mrs. Glasse's very sensible precept for roasting a hare is, "first catch your hare;" and so all sportsmen should remember, that before they can have sport, they must have game in existence, though not in their larder. Nothing is so galling, even to the proverbially patient angler, as to be without a "nibble;" and to the fox-hunter the blank day is the *summum malum*. The former is comparatively well satisfied if he hooks a fish or two, although he may fail to land one; and the latter would much prefer to sit on his horse, and even hear the hounds find their fox and go away without him on the other side of a large wood, rather than go home with the sad words, blank! blank!! blank!!! constantly in his ears. If the fish or fox is lost, it may be from accident, or a bad scenting day, or some other mischance; but if not found, there is less hope for better fortune on the next occasion. It is to the shooter that these observations more especially apply, since he is more particularly dependent upon the preservation of game for the quality of his sport. To walk all day and see nothing is still more disheartening than to whip the waters without a rise. A brace of hares or a single fox will serve for the amusement of a large field of fox-hunters or thistle-whippers; but the pheasant, grouse or partridge-shooter is more voracious, and the quality of his sport is too often measured by the weight of the game-bag. I confess, that in my humble opinion, this thirst for blood, or, as the phrenologist would say, destructiveness, is destructive often of true sport. The bag is considered too much; and to get game (in a sportsmanlike manner if possible, but at all events to get it) is too often the desire of the gentlemen in shooting costume; still, such is now the prevailing taste, and if you wish to gratify your friends with a day's shooting, your only certain plan of affording them that gratification is to show them plenty of game.

When choice of a moor or manor is to be made, it is highly desirable that every pains should be taken to see that it is suited for the purpose for which it is to be rented. If the intending tenant is a young sportsman, he should be very careful not to be taken in, and he had better consult some more experienced friend, upon whose judgment he can rely. The frauds which are yearly committed upon the young sportsman on the moors, as well as in the stubbles and coverts of England, are enough to make him cautious before engaging a beat. There are only two seasons of the year in which it is possible to ascertain the amount of game which a preserve contains—first, during

the shooting season, by actual experience; and secondly, during the pairing season, when dogs may be allowed to hunt the ground with impunity. During the former of these times many would think that the sportsman could scarcely be taken in, as he sees what is left after his sport, and can judge for himself; but this is a great mistake, as many have found to their cost. To guard against it, he should bargain, if he agrees to take the ground, that it should be *at once* given up to him, for I have known a wonderful difference between the head of game, on an extensive beat, in the first week of September, and that in the last week of the year. Keepers, we all know, *can* poach if they like, and if they are not to be retained by their new masters, it is to be expected that many of them will take advantage of the knowledge acquired during their previous term of office. Wherever, therefore, you have decided upon taking a manor, make up your mind either to retain the keeper, if you think him trustworthy, or to displace him at once, if otherwise, although you are certain even then of losing a considerable quantity of game. It is evident that a strange man cannot compete with one who knows all the haunts of the game; and, therefore, the old hand has the opportunity of robbing you if he likes,—or if he does not do so directly, he can indirectly, through some of those half-poachers, half-keepers, with whom so many are in league. But the best time to make choice of a moor or a partridge manor, or, more particularly, of an extensive covert, is in the month of February or March. At this time you may, by a little perseverance, have ocular demonstration of nearly every head of winged game on the beat. By taking out a brace of strong and fast pointers or setters, you may easily beat over a couple of thousand acres of arable land, or double that quantity of moor land, and you will thereby find at least three-fourths of the birds. In this proceeding you must take care not to let the keeper palm off the same birds upon you two or three times over, which he may easily do if you are not on your guard. To avoid this trick, observe the line taken by the birds that have been put up, and instead of following that line, which the keeper will most probably try to induce you to do, just keep to the right or left of it. In beating, also, go straight ahead, if the manor is extensive, and do not follow the same plan as if you were shooting. Take one field after another in straight line, and though you will not thereby see so much game as you otherwise would, you will, at all events, avoid the mistake of fancying that there are 150 brace instead of 50. With regard to pheasants, you may always be shown these birds at feeding time, as the keepers know where to find them as well as barn-door fowl. If, therefore, they are not shown, depend upon it, *if it is the interest of the keeper to show them*, that they are not in existence. As to the number of hares and rabbits, you may generally make a pretty good guess at them by the state of the runs and meuses. If these are numerous and well used, there is sure to be plenty of fur; or, at all events, there has been till very recently. The spring months are also the only ones in which vermin can be successfully trapped; and therefore you have every reason for taking your moor or manor at that time of the year.

In all CONTRACTS FOR TAKING MANORS, the agreement ought to be in writing, and properly executed on a stamped paper. The following form has been found to answer all the purposes required, and is more simple than most of those in general use:—MEMORANDUM of an Agreement made this day between A. B. of ——, and C. D. of ——; the said A. B. agrees to let to the said C. D. (without power of sub-letting or assigning) the whole of the game on the lands, farms, or moors in the parish of ——, from this present date to the —— of ; that is to say, that he, the said C. D., shall have full power by himself, or others having his authority, to kill game over the above-named lands during all lawful times and seasons. And in consideration of the same permission of A. B., the said C. D. agrees to pay the sum of —— on the 25th day of January in each year; but the first payment to be made at the signing of these presents. And the said C. D. further agrees that he will preserve the game in a fair and proper manner, and that he will not destroy, in the last year of his tenancy, more than he has done, or ought to have done, in the previous ones. And, in the event of any difference of opinion,

it is further agreed by and between the parties to these presents, that the same shall be referred to the arbitration of some two parties, one to be chosen by each, with power to choose an umpire, if necessary, whose decision shall be final. In witness whereof we do hereby sign our names, in the presence of E. T., A. B., C. D. Dated this —— day of ——, 187 .

Sect. 2.—Duties and Powers of Gamekeeper.

Gamekeepers, to be really useful, should be almost more than mortal. A perfect keeper should be handy, honest, clever, and brave; he should be civil, yet not too good-natured; and, above all, he should *be fond of his business.* Without this last qualification, it is hopeless to expect a good head of game; and, even if you do obtain this point, yet you will have your gun, or perhaps your dogs, spoiled from some mismanagement on his part. When it is remembered that to do his duty a keeper must be out in all weathers, and at all hours—that he must run all risks in detecting the manœuvres of his opponents, and in opposing them when detected—and that, in addition, he has to be out early and late for the purpose of trapping and feeding—it will be seen that his task is no sinecure. A gamekeeper also should have a good knowledge of the laws affecting game, or he will be constantly leading his master into scrapes. With regard to the number required, it is scarcely possible to give anything like a direction, since they must vary according to the nature of the ground, and the number of poachers infesting it. In some localities, one keeper can easily look over and preserve 1000 acres of partridge-land and covert—whilst in others three or four would be required for the same extent of beat. Wherever footpaths abound, keepers must be in proportion. Manors with these nuisances in abundance can scarcely be strictly preserved, as it is almost impossible to prevent the poacher from recovering the footpath before he is caught or seen—that is, if he has his wits about him. It is seldom necessary to allow the keeper to use a gun, except in very extensive manors, when the head keeper should be allowed the privilege, for the purpose of shooting the hen-harrier or other hawk. If for defence, the revolver is much better; and, in the hands of a steady man, who will not use it except in extreme cases, when his own life is attacked by numbers, it is a wonderfully useful weapon, and is equivalent to two or three assistants all armed with guns. All four-footed vermin should be trapped.

The powers of the gamekeeper vary according to his possession or not of a deputation from a lord of the manor. If he possesses this he may seize for the use of the lord all such dogs, nets, and other engines for killing or taking game, as shall be used within the limits of the manor by any person not possessing a licence. Not possessing a deputation, he cannot use these powers; but he may demand to see the licence of persons sporting on the manor, and to obtain their names and places of residence. His authority to require trespassers to quit is laid down in 1 & 2 Will. IV., c. 32, ss. 31, 32, 36; and to apprehend persons poaching by night under the Acts mentioned at page 19. He has no power to act on the highway under the Poaching Prevention Act, and must call in the aid of a constable there.

Sect. 3.—Rearing of Game Naturally.

After the selection of the shooting-ground—supposing this to have been made in the month of February, or before that time—the duty of the keeper is to take such measures that the game on the beat shall be allowed to breed undisturbed by any of the many nuisances to the game preserver which are so common. No dogs, other than the sheep-dog, should be allowed at liberty; and on no account should pointers or setters be broken after the end of February, nor even so late on the moors. Shepherds' dogs are a standing evil; but as they must be tolerated, the only remedy is to watch their evolutions as much as possible. Many of them destroy the eggs of the grouse, partridge, or pheasant, or find them for the profit of their masters, who often realize five shillings for a nest. It is better, therefore, for the keeper to be on good terms with the shepherd, and to be allowed to give him an occasional gratuity, than to be always quarrelling with him for his

dog's peccadilloes. The affection of these men for their dogs is not astonishing, since they are their sole companions; and, consequently, any abuse bestowed upon their bosom friends is resented by all the means in their power. The poachers, also, are constantly on the look-out for eggs; and at the time of laying they require nearly as much watching as in the commencement of the shooting season. It is a great pity that these men should be tempted as they are, for were there no market for eggs, they would have no object in taking them. Most of our great preservers, for the purposes of the battue, have recourse to purchasing eggs for artificial rearing, and often pay for those robbed from their own land. It should be made illegal, under a heavy penalty, to buy or sell game eggs, since there can be no necessity for this traffic, and it leads to numberless crimes, and temptations to crime. The penalty of five shillings for illegally taking eggs is practically useless, as, unless the offender is caught in the very act of stealing, it is almost impossible to convict him.

The keeper should also take care that his pheasants are well fed at all times, but especially at the pairing season, as they are very restless at that time, and are constantly quarrelling among themselves. The old hen of each hive or nide, if alive, is always anxious to retain her old nest and to drive the young hens away from her neighbourhood. If, therefore, the keeper is not on his guard at this time, the hens stray far off his beat, and make their nests in some spot where they easily fall a prey to the poacher at the end of summer. It is impossible to avoid this entirely; but if the keeper has his ears and eyes open, he can easily detect the nest of nearly every pheasant on his beat, and if they are likely to be taken, he may then, and then only, as soon as the hen has laid her full number, remove them and place them under a couple of bantam hens. Hen-pheasants will spread themselves abroad, and no art will keep them closer together than they like, but the above plan may be adopted to save a great many eggs. There are many other situations in which the nest should either be disturbed if found early enough, or the eggs taken if found too late—as, for instance, in situations likely to be flooded, as ditches or hollow waterways, or in clover fields or vetches, which will inevitably be mowed over before the time of hatching. On the other hand, there is no situation for the nest so good as the wheat or barley-field, especially the former.

Sect. 4.—Artificial Rearing of Game.

The artificial rearing of game is only to be had recourse to under the circumstances above mentioned; but in every large preserve, the keeper, if he knows his business, will always have to rear a very considerable number of pheasants as well as partridges by hand. The latter are the more difficult to bring up, and, luckily, do not require so often the care of the keeper, as they hatch nearly a month before the pheasant, and, consequently, are generally off before the mowing of the clover or the late vetches. In the early grass crop, however, many are mown over; and this is unavoidable, as the partridge's nest is much more difficult to find than that of the pheasant. It is commonly supposed that to rear these birds by hand great experience and care are necessary, but I believe that by attending to the following directions, three-fourths of those hatched may be reared in good feather. The great difficulty is to *hatch* them, for eggs are so easily spoiled by being shaken, that even in the keeper's pocket they are liable, by an unexpected spring or fall, to be injured. This is especially the case in the *early* days of sitting—the embryo chick is then so delicate that a very slight blow or shock destroys its life, and the egg becomes addled. If a hen can be reckoned on, it is far better to wait till within about five or six days of the time of hatching, as the eggs will bear removal very well at that time, if kept warm in a basket full of dry wool. In this way I have removed eggs more than twenty miles, and afterwards hatched nearly all under a common hen of moderate size. The larger the hen the better hatcher she is; but if very large, her legs are so strong, and her body so heavy, that she is sure to kick and trample most of her young charge to death. Hence, though no better as a sitter, yet, as a rearer, the bantam is by far the best. After hatching, let the hen alone for at least twelve hours, then remove her carefully, and place

her in a properly constructed coop, which should be made as follows :—Let a box be made three feet long, two feet wide, and two feet high in front, sloping off to one foot at the back, and having a boarded floor. This box should have a lath front, with intervals to allow the young birds to pass out. This is the coop for the hen, but the young birds ought to have a further space of about two yards square to run in, fenced off by some means. I have succeeded best in rearing young pheasants and partridges in a walled garden, as they are then more safe from the attacks of the weasel, stoat, or rat. If this cannot be procured, then be careful in selecting a good aspect, sheltered from the east and north, and open to the morning sun. It should not be exposed to the incursions of common poultry, especially the turkey-cock, who is a very troublesome gentleman among your game. For food, the best thing is the ant's egg, if it can be procured in sufficient quantities; or if not, then maggots may always be supplied by a few days' notice, but they should be scoured, by placing them in bran for twenty-four hours. As a food for newly-hatched pheasants, custard has been found very beneficial, and is coming into increasing use accordingly. Mr. Tegetmeier, in his work on "Pheasants for Coverts and Aviaries," says that "The best substitute for ants' eggs is custard, made by beating an egg with a tablespoonful of milk, and 'setting' the whole by a gentle heat, either in the oven or by the side of the fire. The 'clear' eggs that have been sat on for a week answer perfectly well. From my own long experience in rearing many varieties of gallinaceous birds, I am confident that a very much larger proportion can be reared if custard forms a considerable proportion of their food for the first few weeks than any other dietary whatever." After they are a fortnight or three weeks old, soaked bread, or coarsely bruised and soaked barley, may be given; and soon after this, whole barley, in its natural state, may form the principal food; but scoured maggots or ants' eggs must still be given, and indeed they are necessary till the birds can be turned into the woods or standing corn, which they may be at about two months of age; after which they require watching, lest they should fall a prey to the poacher or to the fox. At first the young birds must be fed three times a day, but after the first fortnight, feeding twice a day only is required. In cold and wet weather the outer run of the coop should be covered over by a cloth, and at all times by a net, if exposed to the hawk or other bird of prey.

Young Partridges and Pheasants are very subject to the pip, or gapes, in which the bird seems to be gasping for breath, a parasitic worm occupying the area of the windpipe. It is said that a daily pill, containing one grain of black pepper and half a grain of mustard, will relieve this disease, but I cannot speak from actual experience. Dry gravel mixed with ashes should be placed within reach, and in masses, so that the young birds may "bather" in it. The coops ought to be moved daily, as the stain of the birds is injurious to them. No water is to be given for the first three weeks; and afterwards, if diarrhœa comes on, give rice water instead, and boil some rice in alum water and give as food, mixed with the maggots or ants' eggs. In this way it may fairly be calculated that about one-half of the eggs brought home will be reared—one-quarter being addled, and one-third or quarter of those hatched generally dying of accident or disease.

Sect. 5.—Preservation from Poachers.

Notwithstanding every precaution in rearing game, it is useless to expect a good head at the shooting season unless equal or greater care is taken to preserve it from the poacher and the attacks of vermin. With regard to the poacher, everything depends upon the labourers on the farms. If they like to countenance the poacher, or if they unfortunately are poachers themselves, all the efforts of a keeper will be of little avail. The best plan is to make all the labourers feel an interest in the preservation of the game. Let every man receive at Christmas a certain sum proportionate to the head of game killed during the season, and the outlay will be found to be well bestowed, since it will go much farther than the same sum laid out in extra watchers. I have known 650 acres of land preserved entirely, in the neighbourhood of a large town, without any regular keeper, and with an outlay in the shape of

presents to labourers certainly not exceeding 20*l.* a year. On this farm, hares were as plentiful as sheep, and there were partridges sufficient to allow thirty brace to be killed in three or four hours. All parties were in earnest in keeping poachers away; and the result was as I have stated. This shows what labourers can do if they like, and what they will do if it is made their interest to do so. They are either a great evil or a great boon to the game preserver, and he must make up his mind to have them as warm friends or bitter enemies. The regular and systematic poacher is a formidable fellow, opposed to all law, and making a living in the best way he can. After a time, nothing comes amiss to him; and although at first he has taken to his trade from a love of sport, it has ended in his adhering to it from necessity, since he cannot get work when his character is known, nor can any man, after poaching all night, be fit for work in the day also. The existence of the poacher is the great drawback to the sportsman; and his career almost justifies the strong desire which so many hold to do away entirely with all game, in order to get rid also of the tendency to poach. This is a question, however, which I shall not enter upon, as it concerns the legislator more than the sportsman. At present, the law permits the preservation of game; and it is believed that the evils attending upon it are more than counterbalanced by its many advantages. As good subjects, therefore, we have only to avoid encouraging the poacher; and the plan I have proposed, of making it the labourer's interest to discourage the system, is the most humane, as well as the most successful. Of regular poachers, there are four chief varieties, viz.—1st, the systematic London poacher; 2nd, the poaching gent.; 3rd, the regular rural poacher; 4th, the poaching labourer.

The London Poacher is almost always one of a gang, and they conduct their operations in a variety of ways. Sometimes they scour the country in a dog-cart, drawn by a fast horse, by which they are enabled to shoot along the sides of a road, either in covert, or by catching the pheasants on their feed, or by beating the stubbles or turnips adjacent to the road, or even invading the moors; as soon as a keeper or other person approaches, they take to their heels, and on reaching the dog-cart are soon out of sight. It is against these men that the regular labourer may be made the most useful. Few farms in the shooting season are without a labourer within a field or two of every point likely to be invaded; let every one of these be provided with a railway whistle, and let him blow it loudly as soon as he sees a suspicious person in his vicinity. This may be heard for a mile or more, and the keeper may very soon be made aware of what is going on. Besides, the whistle itself alarms the poacher, as it proves the existence of a good system of watching, and he prefers moving off to quieter quarters. These men generally travel in parties of five, of whom one remains with the horse, and the other four either together surround a small covert, and command every side, so that a dog put in is sure to drive out everything to one or other of them, or else they take each side of the road, in the stubbles or turnips, &c. In this way a heavy load of game is often bagged by these rascals, by selecting a line of road studded with preserves, and suited to their purpose. By keeping within the number of five, they avoid the penalties under the 32nd section of 1 & 2 Will. IV., c. 32, and only come under the 30th and 31st sections, if they should be overtaken by the keeper, and can only be fined 2*l.* each. They seldom indulge in night poaching, but are always ready to deal with the local poachers for the game which they may take in that way.

The Poaching Gent. is generally a man who is ardently fond of shooting, and yet has not the opportunity of indulging his appetite for sport for want of land to shoot over. He, therefore, is constantly trespassing upon the lands of his neighbours, and of course subjects himself to the penalty of 2*l.* on conviction for each offence, and to the loss of his licence. He is almost always, however, so good a shot, that the produce of his gun enables him to pay this sum, because he is so wary as to choose his opportunity, and often to escape detection for a considerable time. He knows where he is least likely to be caught, and the times which will suit him best, and acts accordingly. There is seldom much difficulty in dealing with these men, and the harm they do in well-preserved districts is very trifling. It is only in

half-preserved farms that they are to be dreaded, and there they often get the lion's share of the spoil. On the grouse moors, an inferior grade of this class is very destructive to game—he is the sporting miner or blacksmith, or perhaps the denizen of some neighbouring small town, in which he *ought* to be standing behind the counter of a whisky shop, or very often he is a shoemaker or tailor. These men are not regular night poachers; but they are infected with a love of sport, to gratify which they brave all dangers, and encounter even the risk of the county jail. They wait for days, till the keepers are engaged in some particular direction, and then, by keeping on the sides of certain hills, or by other means suitable to the country, they are enabled to shoot an enormous quantity of grouse.

The regular Rural Poacher is the chief bane to the sport; for, though the London hand is very successful occasionally, he does not often pay more than one or two visits to the same preserve; whilst the rural one is always on the look-out. It requires nearly as many keepers or watchers as there are poachers to be quite safe against their incursions; and even then, if a watch is put upon every known man in the neighbourhood, they will outwit you, by giving intelligence to some distant friends in the same trade. They pursue their operations partly by day and partly by night. If by day, their plan is to select a small covert which has just been visited by the keeper for whose round the poacher has been long waiting in concealment, and then, as soon as he is out of sight, the poacher sets his wires and nets in a very few minutes, and enters and disturbs the coppice, either with or without a dog taught to run mute. In five minutes more every hare is caught, and quickly disposed of in some secret spot, often a labourer's cottage, till nightfall. In this way, also, a few pheasants are taken, but not so easily as the hares, as they do not run so readily as the latter, and if sufficiently roused to do this, some one or more are sure to give notice to the keeper in the distance by flying off to another covert, which of itself is sufficient to arouse suspicion. At night the tricks of the regular poacher are most ingenious, and are constantly varying in proportion to the discoveries of the keepers. In moonlight and wet windy nights the poacher's harvest is made. He can then see his game, without being heard so distinctly as he would be on a quiet evening. He shoots the pheasants on their perches, either with the air-gun or fowling-piece, which is made to take to pieces easily, for the convenience of putting in the pocket. Grouse and partridges are chiefly netted; but the former may be more easily shot with the air-gun at night, since the net is much interfered with, in consequence of the heather preventing its acting; the poacher, however, has no difficulty with either, if he can only guess pretty nearly where they are, and this he takes care to do by watching them with a glass at the close of evening. After taking his bearings at that time, he is enabled to drop his net over the place without the trouble of using the stalking-horse or the wide drag-net. The only certain prevention against netting is to watch the birds at night, and disperse them; but this makes them so wild as to spoil the subsequent shooting. Bushing the stubbles interferes with the drag-net, but not with the bag-net. It is a very good plan to go round every evening, just before the calling of the birds, and put a small bush, or even with a spade throw a lot of fresh earth, on the last night's place of rest, which is known by the droppings; this prevents their settling near the same spot, which they otherwise would do, especially grouse, and of which fact the poacher takes advantage by marking their droppings by day, in order to find their settling place at night. Hares are taken by gate-nets in the fields, or by wires and bag-nets in the coverts. It is a very remarkable fact, that these cautious animals rarely use a hedge-meuse by night, preferring the gateways, apparently from a fear of being surprised by the stoat or fox—whilst by day the reverse is the case; the poacher, therefore, cannot take them on the feed with the wire, except in going in or out of the covert, but has recourse to the gate-net, which he fixes to the gate between the feeding field (usually a piece of swedes or clover) and the covert; then sending a mute-running dog into the field, he waits the coming of the hares into the net, and takes them out as fast as they run into it. There is no certain way of avoiding this mode of poaching,

excepting by careful watching; the chief guide is the scream of the hare when caught, which may be heard on quiet nights, but it is a practice very easily pursued by the poacher, with little fear of detection, if he is a clever and experienced hand. A practice has lately been introduced of setting wires in the runs made in the middle of feeding fields; it requires the wire to be very carefully set at a certain height, by means of a twig, and is very destructive. It is also very difficult to detect; but as the poachers cannot find them except in very clear moonlight nights, the keeper knows when to have his eyes open.

Lastly comes the POACHING LABOURER, a perfect pest to the parish in which he resides. He is constantly committing a breach of trust, and does it at so little risk, as often to escape detection for a long time. These men have generally a little terrier, which is capable of being taught to do everything but speak, and assists in a wonderful degree in the capture of game. They have also an old gun which takes apart, and may easily be concealed under the smock frock. If a covey of birds is seen to collect near the cottage, a slight noise is made, and up go their heads, at which moment the gun goes off, and they are all dead at one swoop. The cottage is generally near a road, and some hedge-popping boy is made to bear the blame. Again, these men have generally small gardens, in which are parsley, pinks, &c.; these are favourite food of the hare. She therefore is almost sure to visit them, and in her passage through the garden-fence of course makes a mouse, or at all events she leaves her mark or prick in the soil; if she goes through a gate, this leads to her destruction the next night by wire, gin, or net; and no one can possibly prevent it, even with the eyes of an Argus. Pheasants, also, are sure to come within their reach occasionally, and if they do, they are wired easily enough. A man, for instance, is put to hedging or draining, and is on the ground by six o'clock in the morning, a time when pheasants have not left their feed; he has only therefore to lay a few horsehair loops along the ditches, and by gently driving the pheasants into them, apparently in the course of his work, he captures, every now and then, the value of a day's work in a few minutes. Of course, he conceals the booty till night.

Such are the most common tricks of the poachers, but the most successful are those who invent plans of their own; the keeper has enough to do to outwit them, and his grand object should be to find out their plans, and circumvent them—it is diamond cut diamond. Reformed poachers, if really reformed, make the best keepers, but, unfortunately for this purpose, their exposure to night air and to wet and cold, and their habits of intemperance, have almost always destroyed their constitutions before they think of reforming. It is only when worn out as poachers that they think of turning round and becoming keepers. When the head-keeper is really up to his business, the poachers stand a very poor chance, especially if the master is ready to support his servant with his influence and protection. In every case, whether on the open moors or in inclosed districts, the first thing to be done is to make out a list of all the poachers likely to visit your manor; then discover their habits and haunts, and the kind of game which they excel in taking. Next, get some steady, hardy, and useful watchers, if possible strangers to the locality, and therefore not likely to be influenced by the ties of affinity or friendship. Let these men speedily make themselves conversant with the appearance of all the poachers on your manor, or your head-keeper can initiate them by degrees. They should all have glasses, and be made acquainted with their use; for even in a comparatively small beat, it often happens that a poacher cannot be approached within many hundred yards, and yet it is quite impossible to speak with certainty to a man's identity at the distance of a quarter of a mile. When these men know their duties pretty well, each should have one or more poachers allotted to him, and should always be able to give an account of his or their whereabouts. He does this partly by his own powers of watching, but chiefly from information gained from other parties. By such a mode of proceeding, almost any gang of poachers may be outwitted; and they seldom show fight when they find themselves no match in brain, though in personal prowess they may be superior. Intellect and pluck will

always be served, even when mere brute force has totally failed.

Sect. 6.—Preservation from Vermin.

But, in addition to the attacks of the poachers, the keeper has also to ward off those of the great variety of vermin which prey on game. Here, however, a good man is always rewarded; for, though he may be outwitted by the arts of a first-rate poacher, which are constantly varying, he has only himself to blame if he allows anything beneath his own level to circumvent him. Vermin are endowed with the same instincts now as they were thousands of years ago; and as these instincts are well known, he has only to take advantage of that knowledge, and destroy them. The following is a complete list of the various kinds infesting Great Britain; their habits should be well studied, and the different modes of taking them understood by every man who sets up for a regular keeper. I shall therefore take each variety separately, and describe its appearance, its habits, its prey, and the best mode of capture.

The Cat (*Felis domestica*).—It was formerly supposed that this was merely the wild cat tamed, but more recent investigations have led naturalists to conclude that they are two distinct species. The chief difference consists in the tail, which is long and taper in the house cat (*fig.* 1), but blunt and shorter in the wild cat (*fig.* 2).

The wild cat is now seldom or never found in this country, and its ravages therefore among game are no longer to be feared. Its place, however, in this respect, has been taken by its substitute, the domestic cat, which, in her proper sphere, is of the greatest importance to mankind. Like most other blessings, she is liable to become a curse; and that is most assuredly the case when she takes it into her head to invade the game preserve. Here she is as different from her household character as it is possible to conceive. Instead of being ready to be noticed and fondled, she is wild and wayward, retreating to some secure place on the approach of man, and only venturing out at night. Her ravages are so extensive, that it is fortunate that she is easily taken by trap, which should be the ordinary steel trap, of middle size, between the fox-trap and that for the rat. The trap should be rubbed with the herb valerian, if easily procured; but it is seldom positively necessary, as the cat is almost always readily caught. The trap may be baited in the usual way with a small bird or young rabbit. If there is the slightest difficulty in taking the cat, it is only necessary to use three of these traps sunk in the earth, and surrounding a live bird tied to a stake, elevated about a foot from the ground, and she is sure to be caught. A more minute description will be given of this trap in the ensuing paragraph on the Fox. The gun may be used if necessary, but a cat will carry off an enormous quantity of shot; and even a bullet, if put into her anywhere but in the brain, is by no means sure of destroying her.

The Fox (*Vulpes vulgaris*).—This is, in some districts, one of the worst kinds of vermin, and is carefully trapped —whilst in others it is as carefully preserved. In our present list it must appear as an enemy, although numerous and warm controversies have taken place as to its game-destroying powers. No doubt, the fox may be preserved in the same coverts with the pheasant; and, I believe, if supplied with rabbits, he will not often fall upon game proper, and certainly not upon the hare, to which the rabbit is always preferred. The scent of the fox is so strong, that most animals are aware of his proximity, and therefore they are able to keep clear of him, except on rare occasions, of which he does not hesitate to take advantage. The pheasant, for instance, seldom ventures within his reach; if disturbed, this bird has recourse to his wings, and does not often run into danger fast enough to be off his guard against the scent, though he will freely run down an open ride, or in the fields, where he is secure from this insidious enemy. If, however, a pheasant is wounded, he is sure to fall a prey to vulpine attacks, and so is the wounded woodcock or snipe; but this is of very little consequence, and such a poor maimed creature as a wounded bird is better out of its misery. Keepers are

great enemies to the fox, and aggravate his faults, for two reasons; first, because he interferes with their chief perquisites, the rabbits; and secondly, because he is the only legitimate scapegoat for their shortcomings. If the complaint is made that there is no game, the answer is always ready, "Why, sir, if you will preserve the foxes, you must not expect so much game." There is no other game-destroyer that a keeper can charge with the loss, without damaging his own character, since, in proportion to the scarcity or abundance of all other vermin is his own character raised or depressed. The great misfortune is, that the keeper is induced to play all sorts of tricks, in order to comply with the directions of his master to preserve foxes as well as game, which he fancies are conflicting in themselves, since they, no doubt, are opposed to his own wishes and interests; but being compelled to do so, he proceeds on a plan which enables him to find foxes, though bad ones—thus keeping the order to the letter, but breaking it in spirit. Half of the foxes found in game preserves are only just turned down when the hounds are thrown into covert, or, when at large, have been fed daily with rabbits close to their earths, by which they are rendered so fat and lazy that they cannot stand five minutes before a good pack of hounds. In districts where no hounds are kept, but where game abounds, as in the Highlands of Scotland and in some parts of Wales, there can be no reason for the preservation of foxes, and there they should be killed down as closely as possible. They are not very difficult to trap with the gin of full size, four, five, or six of which should be set round a dead lamb or rabbit, with the inside exposed as a means of spreading the scent, and partly buried in the ground as if for a dog. Of course, the traps should be carefully fastened down with a short chain. The best way to set them is to dig a piece of ground well over, about five or six feet square, then take out four, five, or six spadefuls of earth, each leaving a hole sufficient to contain a trap; lay the trap therein, and fix it by driving in the peg, concealing the chain and every part but the spring and the jaws and plates. The trap should then be set, propping up the plate with a bit of stick, to which a string is attached in order to withdraw it; then cover all up with finely-chopped grass or moss, and withdraw the stick by the string. If the fox is very wary, it is better to leave the traps unset for a night or two, and throw down, every night, a rabbit or pigeon on the ground at some little distance, but clear of the traps. When these have been taken freely for a couple of nights, a similar bait should be placed in the middle of the traps, without handling it, or treading on the newly-levelled earth or the covering grass, which would at once raise the suspicions of the fox. If these precautions are taken, the most wary will generally fall. Chaff answers remarkably well to cover these traps with, but it has the serious evil of attracting the pheasants, who come and search for grain, and in that way sometimes are caught instead of the fox or cat for which they were set; the grass or moss ought to be very short and light, or it may catch in the trap, and prevent its acting. If the keeper has only one trap, it should not, as is often done, be set in a run, for fear of its catching the game, but an open space a short distance off the run should be thrown into it, by making a gap, if there is not already one, and in that gap the trap should be laid; the bait should be raised, in this case, on a stub or short stick driven into the earth, which should be about as tall as the animal to be taken can just reach with his nose, so that he will walk on his toes, and not crouch on his belly, in reaching it. In this way the leg is well seized, and not the toe only, or what is still worse, altogether lost by the body being first grasped, and then slipping out of the trap; thus, for a fox the bait should be twelve inches, for a cat eight inches, and for a weasel or polecat four inches above the level of the plate of the trap. The keeper should spring these traps every morning, and oil them or repair them with the file and hammer, when necessary to their perfect acting.

The Marten (*Martes abiëtum et foina*).—The marten, the polecat, the stoat, and the weasel all belong to the sub-family *Mustelina*. There are two kinds of martens, the pine and the beech marten, the former being more common in the north, and the latter in the southern parts of the island. The martens inhabit large woods, living in the hollow of trees, or in an old

magpie's or squirrel's nest. They have from three to four young. They feed on game and other birds, or mice, rats, and squirrels. In colour, they are of a reddish-brown, and are the largest of the *Mustelina* or weasel-like family. This sub-family have all long bodies, short legs, long tails, small heads, with powerful jaws, sharp teeth, an insatiable desire for blood, and great tenacity of life. They all prefer the blood and brains to the rest of the body, and do not eat the flesh except from necessity. Being all so much alike in their habits, I shall defer the description of their mode of capture till I have described them all.

The Polecat (*Putorius fœtidus*).—The polecat, fitchet, or foulmart is very common in this country, and is the most destructive to game of all vermin, except, perhaps, the domestic cat when become wild ; it will even surprise the hare in her form, or the pheasant on her nest. It generally makes a short burrow in the side of a sandy bank, which emits a tolerably strong scent of the animal, and is thereby easily known by the keeper, who proceeds at once to dig the animal out ; this, however, he cannot always do, as the polecat is very fond of choosing the root of an old tree under which to make its burrow. Farmers are apt to suppose that this creature does them much good in destroying rats ; but it is too bulky to follow them in their runs in the wheat ricks, and they are too wary to be caught napping out of them. The polecat is smaller than the marten, and of a blacker colour, approaching to a dark tortoise-shell.

The Stoat (*Mustela erminea*).—This is the next in size of the *Mustelina*, and is even more voracious and bloodthirsty, in proportion to its size, than the polecat. It is, in summer and in mild winters, of a reddish-brown, with a black tip to its tail, but it becomes more or less white in winter, according to the degree of cold, always, however, retaining the black tip to the tail. Like the polecat, it burrows in the ground, but makes a smaller hole, and is not easily discovered in consequence, or by its scent, which is not nearly so strong as that of the polecat. It pursues all kinds of game, and destroys the eggs of pheasants and partridges with great perseverance. It should be diligently trapped and exterminated.

The Weasel (*Mustela vulgaris*) is the smallest of its tribe, never being more than seven inches in length from the nose to the tail. It resembles the stoat in most respects, but is less hairy, and its tail is shorter in proportion, and without the black brush at the extremity, which, in the stoat, forms that remarkable hairy tuft so conspicuous in the ermine-fur. The weasel makes longer jumps or bounds in its run than either of its congeners, that is, in proportion to its size. Its habits resemble those of the stoat and polecat, and it is quite as bold and voracious, but it is not able to cope with the hare or pheasant, though it is said to fasten on the back of the hare, and suck its blood for miles, till the poor creature sinks from exhaustion.

Mode of Trapping the Mustelina or Weasel Kind.—They may all be taken in two kinds of traps—the gin or steel trap, and the box-trap. The gin should be of the small size suited for rats, or, for the marten and polecat, a little larger. It should be set a little out of the run of the animal, wherever that has been discovered, and should be buried as for the fox, and covered over with feathers, or fine moss or grass. The bait should be an egg impaled on a stick (and the contents, half escaped, are then easily scented), or part of a pigeon or rabbit, especially the liver and entrails. By taking the precaution to set these traps a little out of the hare and rabbit runs, these latter animals will escape, especially if the entrails of the bait are rubbed against the sides of the opening which leads to the trap, as game have all a dislike to the smell of blood and garbage. In no case should the bait be placed upon the bridge of the trap. If a polecat or stoat has been carrying off the eggs from a nest as fast as they are laid, ascertain, if possible, its track in reaching the nest, and there place your trap, with an egg impaled a little beyond it. It must not be too near the nest, or the parent-birds may be caught. Next to the gin, the box-trap is the most useful, and it has this advantage, that it never admits the hare or the pheasant, and if by chance the rabbit enters, it is not injured. It consists of a long box, about nine or ten inches square, with a slide at each end, which is held up by a long arm or lever proceeding to the centre

of the box. Here the two arms are held down by a catch, which, when set, holds up a small stage at about half or three-quarters of an inch from the floor of the box. Hence, any animal in passing through the box is sure to tread on the stage, which, by the way, ought to be made so as to occupy the whole width of the interior. By placing the bait on both sides of the stage, at whichever end the animal enters, it is encouraged to proceed, because it first cautiously seizes and devours the one half nearest to it (which should not be large enough to satisfy its hunger), and then proceeds over the stage to lay hold of the other portion, when, on placing its forefeet on the stage, the catch is released, and the slides at each end fall and inclose it. The slides should not be made to lift above three or four inches, for fear of the hare entering. When set, the box ought to be placed in a run or dry ditch, and the space at the sides of each end should be filled up and gradually assimilated to the run or ditch by means of stones, or rubbish, or earth, so as to compel the vermin to enter or turn back. All this should be done in as cunning a manner as possible, so as to escape the observation of these animals; but they are not nearly so difficult to deceive as the fox, the rat, or the magpie.

The Rat (*Mus decumanus*).—This noxious animal is too well known to need description. It breeds so rapidly as to overwhelm the farmer if not kept down, bringing forth twelve or fourteen young ones three or four times a year. It is not very injurious to game, unless it is more than usually abundant, as it has generally the wheat-rick of the farmer, or his hen-roost or pigeon-cote, to attack, in preference to game; still it sometimes happens that the more than commonly voracious rat attacks the eggs of the pheasant or partridge, and if so, he must be destroyed if possible. It is very difficult to trap these animals, and the best mode is to ferret out or poison them. Very often the rat takes up his abode on the banks of artificial water, which is generally near some game covert, and in that situation he is very destructive to waterfowl as well as young game. Here the following method of trapping will answer well:—Get a wooden frame, made of two cross-pieces of wood, with a block in the middle; upon these set four common rat-traps, loosely let into the pieces, with the spring towards the outside, and weight the whole so that when floated in the water, the traps will just sink an inch below the level of the water; then by placing a bait on a short post, raised about six inches above the middle block, the rats, in swimming to it, or raising themselves to it, are almost sure to strike one of the traps with a hind or fore leg, and as the traps are only placed loosely on the cross bar, and fall off suspended by a string, the rat is drowned at once on being caught, and does not prevent others from incurring the same fate. This is the only certain mode of trapping rats; and though the poisoning of them is easy enough, it has many disadvantages—in the first place, it is dangerous to children and dogs; secondly, the dead rats are apt to cause foul smells in any neighbouring house when they die. To destroy rats in this way, arsenic should be mixed up with malt-dust or wheat-flour, in the proportion of half a pound of flour to an ounce of arsenic; then with water make into a paste, and add a few drops of oil of aniseed, of which rats are very fond. The mass should be broken up into pieces of all sizes and shapes, not round like pills, but just as they happen to break by chance; then taking one or two of these in a spoon, and carefully avoiding the contact of the hand, which the rat easily detects, drop them into such places frequented by rats as are too narrow for dogs or children to reach. By dropping them thus, as it were accidentally, one or two in a place, the suspicions of the rat are lulled, and he generally eats them greedily. If eaten, death is pretty certain; but sometimes they cause vomiting, and the rat escapes. Phosphor paste, now generally sold at the oil-shops of London and the large provincial towns, is also a pretty sure poison, but cunning old rats are not always to be taken in by it.

The Hedgehog (*Erinaceus Europæus*).—The hedgehog is destructive both to the eggs of game and to the newly-hatched birds. It is not nearly so injurious as any of those which I have already described, but should be kept under. It is easily found by the terrier, and may then be killed by the keeper

THE OTTER (*Lutra vulgaris*).—This creature is a kind of water polecat, and is as destructive to fish as that fierce little animal is to game. It also somewhat resembles it in general form, but its head is more blunt, its fur shorter and thicker, and its feet are webbed. It is amphibious in its habits, but if kept under water more than a few minutes at a time is soon drowned. It measures usually, from the nose to the tail, nearly two feet, and the tail itself is often sixteen inches in length. The eyes both look upwards, and it is thus enabled to watch the fish while lying below them on the bed of the river, and therefore unseen by them. The footmark or *seal* of the otter is easily recognised by a round depression corresponding with the ball of its foot. Its burrow is always entered under water, and it admits air only by a small hole worked from the inside, and not readily found. In some districts the otter is hunted, and affords good sport, and when that is the case, it should not be interfered with; when, however, no otter hounds are within reach, the otter may be trapped in the same way as I have recommended for the rat in the water, excepting that it is useless to bait the trap, as the otter will not touch a dead fish. The traps should be set near where the holt is, or close to any of the ordinary landing-places of the animal, which may be known by the "seal" or "spraints." Of course the whole apparatus must be larger, and the traps should be of the full size for a fox; they should be sunk three inches. It is a more certain trap for the otter than even for the rat, as the former is not so sagacious an animal.

In the various parts of Great Britain we find a long list of birds of prey, all of which are more or less injurious to game, from the eagle to the merlin. But there are few districts in which all are found; the larger kinds are chiefly to be met with in the inaccessible parts of Scotland and the Hebrides, as well as in some parts of Ireland, whilst the smaller varieties are very troublesome in the woodlands of the south. At the head of the list stands

THE GOLDEN EAGLE (*Aquila chrysaëtus*).—This beautiful bird is now seldom found in Great Britain, and is very rare except in the most remote districts of the north. It can only be confounded with the osprey in this country, since there is no other bird of prey at all near these birds in size, which is about that of an ordinary turkey. The golden eagle is of a rich golden brown colour, with powerful hooked beak and strong talons, and destroys large game to a fearful extent, as well as young lambs. The flight of the eagle is very beautiful, and it generally hunts in pairs. The hen lays two eggs of a creamy-white ground, with brownish spots; the nest is very rudely constructed in some very inaccessible crag or rock, and is merely a heap of sticks and grass.

THE OSPREY (*Pandion haliœëtus*) is only found on the sea-coast, or very near it. It is of the same size as the golden eagle, but differs in colour and in food, which is composed entirely of fish. In the salmon fisheries it sometimes is a sad depredator, especially at the salmon leaps, when they happen to be near the sea. Here it will seize the fish as they are struggling up the fall, and if once it takes to this dainty, it is sure to return to it. It is less wary than the golden eagle, and may generally be approached with care while fishing. Both these eagles must be shot, as they are very difficult to trap, and their nests are generally fixed in such an inaccessible crag as to be almost beyond the reach of man.

THE KITE (*Milvus regalis*).—The kite, or gled, was formerly common in the wild districts of England, but has now become very rare. It is a game-destroyer, though not to any great extent. It may always be recognised by its long, forked tail. Its length is more than two feet. The legs are yellow.

THE BUZZARD (*Buteo vulgaris*) is considerably less than the golden eagle, being about twenty-two inches from tip to tail, and is very different in general aspect and habits. When seeking for food, it sits at the top of some high tree, and generally on a dead branch, keenly watching for the appearance of some young rabbit or hare, or for a brood of grouse or pheasants. As soon as these come in sight, it darts down and picks up its prey, without alighting, and is sure to seek the same branch with the purpose of devouring it. The buzzard builds in trees; its eggs are generally four, of a whitish colour, with pale brown spots.

The Peregrine Falcon (*Falco peregrinus*).—The blue or peregrine falcon is very destructive to all game, but it has been almost exterminated in this country. It is one of the birds best suited to falconry, which has been one reason of its scarcity. It builds in the most inaccessible parts of the mountains, and can rarely be trapped. The hen is very beautiful. Back of head, dark slate colour; outside of wings and back, lighter slate; under part of neck and throat, white; breast of a buff ground, with dark brown streaks. Length, from point to point of wings, forty inches; from tip to tail, seventeen inches.

The Hobby (*Hypotriorchis subbuteo*) is a bird of passage, and only a summer visitor; it can therefore scarcely be considered a dangerous game-destroyer, nor can it easily be taken at that season.

The Merlin (*Hypotriorchis æsalon*).—This spirited little hawk is, among the falcons, very much like the weasel among the *Mustelina*, being as bold as a game-cock, as voracious as a shark, and as nimble as an eel. It is said to attack the grouse, and sometimes to succeed in capturing them by the force of the blow. It is a very fast bird for its size. The male and female are nearer of a size than in the others of its family. It is of a bluish brown on the upper parts, with a deep buff ground for the breast, studded with dark streaks. Its entire length is only thirteen inches. It seldom weighs quite eight ounces. These three species of the falcons are all used in falconry, and are all difficult to trap.

The Hen Harrier (*Circus cyaneus*).—The plumage of the male and female varies so much, that for a long time they were regarded as two different species. The former is of a light blue, while the latter is brown. Both have white rings on the tail, and a black mark on the ends of the wing feathers. They are about forty inches across the wings, when extended. In length they are about seventeen inches. They are dreadful destroyers of the grouse, and beat their ground in the most regular way, crossing it like the pointer or setter, flying close to the surface, and swooping on the unhappy grouse or partridge the moment their eyes catch sight. They build their nests on the ground, in heather or thick bushes. These should be diligently sought for, as the young birds, once found, are a sure mode of trapping the old ones.

The Sparrow-Hawk (*Accipiter nisus*) is considerably smaller than the last, never being more than fifteen inches in length, and the male seldom more than nine. It is chiefly injurious to the game preserve from taking off the very young partridges and pheasants, upon which it delights to pounce. It builds upon high trees, laying four or five eggs, of a white ground with variable reddish marblings.

The Kestrel or Windhover (*Tinnunculus alaudarius*).—It is commonly supposed that this bird is a very bold destroyer of game, but I am quite satisfied this is a great mistake—it will always prefer the mouse to any bird, and I believe rarely attacks any other prey than the mouse or the frog. It will not attack the young of the game birds, and its only fault is, that it will sometimes take the very young leveret. As, however, these little things are seldom visible, and as the kestrel hunts solely by sight, it is very seldom that this accident happens. This bird may fairly be allowed to benefit the farmer, without injury to the game preserver. It is very ornamental in its flight and general appearance, and when young is more like the owl than any of the hawks.

Mode of Trapping Winged Vermin.—Nearly all these birds may be taken with the steel trap, which should be variously set, according to the habits of the particular bird. The buzzard is not very difficult to trap, though it does not alight to take its prey, and it may also be shot while perched on its bough. A circular trap has been invented, and is sold by all the gunmakers, which requires no bait, and is simply to be placed on those boughs which are frequented by these birds. It requires, however, far more watching to detect their haunts than to get near them with the gun. If the attempt is made to shoot them, it generally requires the rifle for their destruction, as they are usually seated out of the distance suited to an ordinary fowling-piece. The harrier is somewhat difficult to trap, but it may be taken, and so may the buzzard, by means of a dead grouse or partridge set up on a little mound of earth, and studded with large fish-hooks. Both of these birds make a swoop at their prey, and in that way they may often be caught with the hooks, which

should have their points directed towards the tail of the bait, and should project about half an inch above the feathers. One should be firmly on the back, one on the head, and one on the shoulder of each wing. The hook on the head is the most likely one to catch, and it should have a firm attachment by means of a line a few inches in length. The hooks will not hold the hawk long; but by placing four concealed rat-traps around the bait, the hawk, in its struggles to free itself, is sure to strike one, and is then securely held; but the taking the young of these birds is by far the most easy way of destroying them. It is very much less trouble to watch the bird to her nest than to trap her, or to shoot her even. When the nest is discovered, and while the hen is sitting, a ball may often be sent through the old bird, and the eggs will not then require to be reached, as they will of course be addled. As soon as the young birds are laid hold of, it may fairly be concluded that the old ones are in your power; for by fastening them down alive in the middle of three or four concealed traps, the old birds are soon tempted into their jaws. Each young bird should be fixed in the centre of a circle of traps at such a distance apart that both old birds may be caught.

It is often said by keepers that they can dispense with the GUN in destroying these birds of prey; and many masters strongly object to the use of it, from the fear of its being abused; but in districts where the hen-harrier, or the buzzard, or the peregrine falcon abounds, the gun *must be used*, or a sad loss of game will be the result. The nest cannot always be found or reached; and sometimes it is on another property altogether, in which case it cannot of course be taken without the consent of the adjoining keeper, who is as jealous of his rights and distinctions as a Turk.

THE BARN OWL (*Strix flammea*) is generally considered very destructive to game, but I believe erroneously so. Like the kestrel, it lives almost entirely on mice and rats; it will, however, when it has its young to provide for, attack the leveret or the rabbit, and perhaps the young pheasant; but on inspecting the casts of these birds I have never seen any quantity of feathers or fur, which would inevitably occur if they fed to any extent upon game. The nest may be easily taken, or the owl trapped or shot. A grand parade is generally made of the owl by keepers, as it is a bird which makes a fine show among the list of killed, and yet is not very difficult to destroy.

THE RAVEN (*Corvus corax*) is not common in this country, and is principally met with in wild districts, like the New Forest, or Dartmoor. The raven is a voracious bird, and nothing comes amiss to it, from carrion to eggs or fish. It breeds in the holes of high rocks, or on very high trees, and the nest is more difficult to take on that account. The eggs are four, of a dusky green. It is a very destructive bird to game, and should not be suffered to live, as it has no good qualities like the owl and kestrel. It is extremely wary, and difficult to shoot or trap.

THE CROW (*Corvus corone*) is a smaller edition of the raven, which it resembles in every respect but size. It is too well known to need description.

THE JACKDAW (*Corvus monedula*) is also very much of the same habits as regards game, but it is only obnoxious to the eggs. Its nest is seldom within the keeper's reach, being almost invariably in some old tower or church steeple.

THE MAGPIE (*Pica caudata*).—This pretty, lively bird is one of the most persevering destroyers of the eggs of game birds, and ought to receive no mercy. It is a very shy and cunning bird, but its nest may almost always be found, and the young taken and used as decoys, as I have already described. It builds in the tops of trees, high and low. The nest is domed, and built of a mass of sticks curiously interlaid.

THE JAY (*Garrulus glandarius*).—This beautiful bird resembles the magpie in its thirst for eggs, but is not quite so voracious.

THE HERON (*Ardea cinerea*).—The heron is only injurious among fish, which form its sole food. It is often preserved with great care, on account of its association with baronial sports. It is now, however, seldom used for hawking purposes, and, wherever the fisheries are preserved with care, herons are diligently destroyed. It may be shot, or hooked, or trapped under water by the floating trap, as used for the rat, placing the bait in the same way, but fixing it in the shallows.

THE POISONING OF WINGED VERMIN.—I have already alluded to the different modes of trapping the winged varieties of vermin. It remains for me only to speak of the modes of poisoning them which were formerly adopted but are now illegal in this country. For the eagles, hawks, buzzards, and kites, arsenic is the best; but there is great danger in using it, lest some dog should feed on the poisoned bait; the liver is the best part in which to insert the arsenic, as it is generally the choice morsel first selected by them all, or the brain, as is the case more particularly with the falcon and the sparrow-hawk. For the raven, crow, magpie, and jay, strychnine may be legally used in an egg, and acts well, as they will take it with great facility. These poisons should never be trusted to anyone but a person of good character for care and integrity, as they are equally destructive to man. They may be used in the egg by making a small hole, then inserting five grains of either, and closing the hole again with a piece of paper and a little collodion. In this way there is less chance of any dog or child getting to it, as the egg may be placed in the fork of a tree, out of sight from below.

SECT. 7.—ENGLISH GAME LAWS.

Having provided for the procuring and preserving game necessary to the sport we are considering, it is next desirable that this should be conducted agreeably to law. The following Abstracts of the various Acts are therefore given; but it will be requisite, before proceeding to any legal prosecution, to obtain the Act itself, or the assistance of a professor of the law. The Abstracts, however, will be sufficient for the sportsman's guide in ordinary cases.

The principal laws which now regulate the preservation and sale of game in the three divisions of the United Kingdom are as follows, independently of the common law of trespass :—

ENGLAND AND WALES.

1 & 2 Will. IV., c. 32—(Trespass, &c., known as *the* Game Law).
11 & 12 Vict., c. 29—(Killing Hares).
9 Geo. IV., c. 69 } (Night Poaching).
7 & 8 Vict., c. 29 }
23 & 24 Vict., c. 90—(Game Licence).
25 & 26 Vict., c. 114—(Poaching Prevention Act).

SCOTLAND.

2 & 3 Will. IV., c. 68—(Trespass, &c.)
11 & 12 Vict., c. 30—(Killing Hares).
9 Geo. IV., c. 69 } (Night Poaching).
7 & 8 Vict., c. 29 }
23 & 24 Vict., c. 90—(Game Licence).
25 & 26 Vict., c. 114—(Poaching Prevention Act).
1621, c. 31—(Property Qualification)
1707, c. 13 } (Fixing Close
13 Geo. III., c. 54 } Times).

IRELAND.

13 Rich. II., c. 13 } (Qualification).
10 Will. III., c. 8 }
9 Geo. IV., c. 69 } (Night Poaching).
7 & 8 Vict., c. 29 }
23 & 24 Vict., c. 90 } (Game Licence).
5 & 6 Vict., c. 81 }
23 & 24 Vict., c. 113, s. 43—(Repeals Licence for Killing Rabbits).
25 & 26 Vict., c. 114—(Poaching Prevention Act).
27 Geo. III., c. 35—(Trespass in Pursuit of Game, &c.)
37 Geo. III., c. 21 }
28 & 29 Vict., c. 54 } (Close Times).
37 Vict. c. 11 }

THE UNITED KINGDOM GENERALLY.

26 & 27 Vict., c. 113—(Poisoned Grain Prohibition Act).
27 & 28 Vict., c. 115—(Poisoned Flesh Act).
32 & 33 Vict., c. 117—(Sea-birds Preservation Act).
33 & 34 Vict., c. 57—(Gun Licence Act).
35 & 36 Vict., c. 78—(Wild Birds Protection Act).

THE PROPERTY IN GAME, as between the landlord and tenant, resides in the latter, subject to certain exceptions which are defined in sections 7 to 12 of the 1 & 2 Will. IV., c. 32.

ABSTRACT OF ENGLISH GAME ACT.

1 & 2 *William IV.*, *c.* 32.—*Oct.* 5, 1831.

Sec. 1.—Repeals old statutes.

Sec. 2.—"Game" to include hares, pheasants, partridges, grouse, heath or moor-game, black game, and bustards.

Sec. 3.—Any person killing or taking game, or using a gun, dog, net, or

other engine for that purpose, on a Sunday or Christmas Day, is subject, on conviction by two justices, *to a penalty* not exceeding 5*l.* and costs. Limits the taking of game as follows :—

Partridges not to be taken between . . .	Feb. 1 and Sep. 1.
Pheasants, ditto.	Feb. 1 and Oct. 1.
Black game, in New Forest, Somerset, and Devon . . .	Dec. 10—Sep. 1.
Black game elsewhere . . .	Dec. 10—Aug. 20.
Grouse. . . .	Dec. 10—Aug. 12.
Bustard . . .	March 1—Sep. 1.

Penalty not exceeding 1*l.* for every head of game so taken.

Any person poisoning game to be fined not exceeding 10*l.* with costs.

Sec. 4.—Persons licensed to deal in game, who shall buy or sell, or have in their possession, any bird of game after ten days (one inclusive and the other exclusive) from the days above fixed; and persons unlicensed, who shall buy or sell any bird of game after such ten days, or shall have in their possession any bird of game (except such as are kept in a mew or breeding-place), after forty days, shall be subject, on conviction before two justices, to a penalty not exceeding 1*l.* for every head of game.

Sec. 5.—Act not to affect the law relating to game certificates.

Sec. 6.—Game certificates* to qualify to take game (subject to trespass). Gamekeepers' licences not to extend beyond the limits of their appointment.

Sec. 7.—Game to be the property of the landlord, in those cases where the land was held on lease granted previously to the passing of this Act.

Sec. 8, 9, 10.—Act not to affect rights of manor, forest, chase, or warren, or any royal forest rights. Lords of the manor still to have game on waste lands; and also right of deputation.

Sec. 11.—Landlords having reserved the right in game may authorize any person or persons to shoot who have certificates.

Sec. 12.—When landlord reserves right of game, tenant shall not kill or take it, or cause it to be killed or taken, under a penalty not exceeding 2*l.*, and for every head of game not exceeding 1*l.*, with costs.

Sec. 13, 14.—Lords of manor may appoint gamekeepers, and authorize them to seize all dogs, &c., used within the manor by uncertificated persons. Lords of manor may also grant deputations.

Sec. 15.—Persons seised in fee, or for life, of lands in WALES, of the clear annual value of 500*l.*, and not within any manor, lordship, or royalty, or enfranchised or alienated therefrom, may appoint gamekeepers.

Sec. 16.—Gamekeepers to be registered with the Clerk of the Peace.

Sec. 17.—Certificated persons may sell game to licensed dealers. Gamekeepers not to sell game except on account of master.

Sec. 18.—Justices may grant licences in July to any householder, or keeper of a shop or stall, not being an innkeeper or victualler, or licensed to sell beer by retail, or the owner, guard, or driver of any mail coach, stage coach, stage waggon, van, or other public conveyance, or a carrier or higgler, or in the employ of any such person, to buy game of any person who may *lawfully* sell it; such parties to have their names in full, together with the words—"licensed to deal in game," on a board in front of stall.

Sec. 19.—All parties obtaining a licence to sell game shall also obtain a certificate on payment of 2*l.* duty, in the same way as game certificate; penalty for non-compliance, 20*l.*

Sec. 20.—List of such persons to be made out by collector of assessed taxes.

Sec. 21.—One licence only necessary for two or more partners.

Sec. 22.—A conviction under Game Act to forfeit licence.

Sec. 23.—Persons killing or taking game, or using any gun, dog, &c., for the purpose of searching for game, without game certificate, are subject to a penalty not exceeding 5*l.*, as well as the penalty under Game Certificate Act.

Sec. 24.—Any persons not having right of killing game on land, or permission from the person having such right, who shall wilfully take or destroy, on such land, the eggs of any bird of game, or the eggs of any swan, wild duck, teal, or widgeon, or shall knowingly have in his possession

* For game certificates read "licence to take game," under the Act 23 & 24 Vict., c. 90.

any eggs so taken, shall pay a sum not exceeding 5*s.* for every egg, with costs.

Sec. 25.—Persons selling game unlawfully, to be fined not exceeding 2*l.* for every head so sold or offered for sale.

Sec. 26.—Allows innkeepers to sell game to customers, such having been procured from a person licensed to sell game.

Sec. 27.—Persons not licensed to deal in game buying game from *unlicensed* persons, subject to a penalty not exceeding 5*l.*, with costs.

Sec. 28.—Penalty for licensed persons not complying with provisions of the Act, 10*l.*, with costs.

Sec. 29.—Servants of licensed persons may sell game.

Sec. 30.—Persons trespassing in the daytime in search of game, woodcocks, snipes, quails, landrails, or conies, may, on conviction by one justice, be fined, not exceeding 2*l.*, with costs; or if to the number of five, 5*l. each*, with costs; and the leave of the occupier, if not entitled to the game, shall not be a sufficient defence against the landlord.

Sec. 31.—Trespassers may be required to quit, and to tell their names and abode; and in case of refusal, may be arrested, and on conviction before one justice may be fined not exceeding 5*l.* But the party arrested must be discharged, unless brought before a justice within twelve hours, though he may nevertheless be afterwards summoned.

Sec. 32 & 34.—In case five or more enter upon land (as in Sec. 31), and shall by violence or menace endeavour to prevent any authorized person from approaching for the purpose of requiring them to quit, or tell their names or places of abode, *each* person shall be fined not exceeding 5*l.*, with costs.

Sec. 35.—Penalties, as to trespassers, not to extend to persons hunting or coursing, and being in fresh pursuit of any deer, fox, or hare, already started.

Sec. 36.—Game may be taken from trespassers who shall refuse to deliver up the same.

Sec. 37.—Penalties to be paid to overseers of the parish, one-half to go to the use of the county, and the other to the informer.

Sec. 38.—Imprisonment in case of non-payment.

Sec. 39.—Gives form of conviction.

Sec. 40.—Justices to have power to summon witnesses.

Sec. 41.—Prosecutions to be commenced within three calendar months of offence.

Sec. 42.—Prosecutor not obliged to negative by evidence any certificate, licence, &c., but party adducing it bound to prove it.

Sec. 43 & 44.—Convictions to be returned to Sessions. Persons convicted entitled to appeal to the same.

Sec. 45.—No conviction to be quashed from informality.

Sec. 46.—Permits the prosecutor to proceed by the old action for trespass.

Sec. 47.—Limits the bounds of action against magistrates and others for exceeding their powers.

Sec. 48.—This Act only to extend to England and Wales.

Abstract of Law permitting the Killing of Hares.

11 & 12 *Vict.*, c. 29.

Sec. 1.—Permits any person in the actual occupation of any inclosed lands, or for any owner thereof, who has the right of killing game thereon, by himself, or by any person authorized by him in writing, according to the form of the schedule thereto annexed, or to the like effect, so to do, to take, kill or destroy hares being upon such land, without duty or certificate.

Sec. 2.—No owner or occupier to have power to grant permission to more than one person at the same time in each parish; such authority, or a copy thereof, to be delivered to the clerk of the magistrates.

Sec. 3.—No person authorized to kill any hare as aforesaid, unless otherwise chargeable, to be liable to gamekeeper's duties.

Sec. 4.—Permits coursing without certificate.

Sec. 5.—Debars poisoning game, and the use of guns by night.

Sec. 6.—This Act not to affect old agreements relative to game.

Schedule.

I, A. B., do authorize C. D. to kill hares on my lands (or the lands occupied by me, as the case may be), on ——, within the —— of ——, (here insert name of parish or place).

Dated this —— day of ——.

Witness, A. B.

ABSTRACT OF NIGHT POACHING ACTS.

The Act 9 Geo. IV., c. 69, s. 12, defines night as commencing at the expiration of the first hour after sunset and concluding at the beginning of the first hour after sunrise.

Sec. 1.—Repeals 57 Geo. III., c. 90, and enacts that if any person shall unlawfully take game by night, he shall be punished with imprisonment not exceeding three calendar months. If for the second offence, not exceeding six calendar months, and find sureties on liberation. If for the third time, not exceeding two years.

Sec. 2.—Persons found committing such offence may be seized, and carried before two justices, and if resisting, they may be convicted of a misdemeanour, and transported for seven years.

Sec. 9.—Three or more persons found armed on land, to be guilty of a misdemeanour.

The 7 & 8 Vict., c. 29, recites the above Act, and declares, as it has been evaded by the destruction of game on high roads, that from and after the passing of this Act all the pains, punishments, and forfeitures imposed by it, shall be applicable when the offence has been committed upon a road adjoining.

ABSTRACT OF NEW GAME LICENCE ACT.

23 & 24 Vict., c. 90, sec. 1.—Repeals old certificate Acts.

Sec. 2.—In lieu of old duties, the following licences to be levied:

For a licence in Great Britain, or a certificate in Ireland, to be taken out by every person who shall use any dog, gun, net, or other engine for the purpose of taking or killing any game whatever, or any woodcock, snipe, quail, or landrail, or any conies, or any deer, or shall take or kill by any means whatever, or shall assist in any manner in taking or killing by any means whatever, of any game, or any woodcock, snipe, quail, or landrail, or any coney, or any deer—

1.—If from 5th of April to 5th of April -	£3	0	0
2.—If from 5th of April to 31st of October	2	0	0
3.—If from 1st of November to 5th of April	2	0	0
4.—Any person having the right to kill game may take out a licence for his servant assessed as gamekeeper, for - -	£2	0	0
5.—Licence to deal in game	2	0	0

Sec. 3.—Act to be under the control of the Commissioners of Inland Revenue.

Sec. 4.—Persons must take out licence before killing game, &c., or incur penalty of 20*l.*

Sec. 5.—Excepts from the provisions of this Act—

1.—The taking of woodcocks and snipes with nets and springes in Great Britain.

2.—The taking or destroying of conies in Great Britain by the proprietor of any warren, or any inclosed ground, or by the tenant of lands, either by himself or by his direction or permission.

3.—The pursuing and killing of hares by coursing or hunting.

4.—Pursuing deer with hounds.

5.—Taking deer in inclosed ground, by the owner or occupier, or by his direction or permission.

It also exempts—

1.—Any of the Royal family.

2.—Gamekeepers of Her Majesty, or her Commissioners of Woods and Forests.

3.—Any person aiding those duly licensed to kill game.

4.—Those persons killing hares under 11 & 12 Vict., c. 29.

Sec. 6.—Nothing in this Act to alter 11 & 12 Vict., c. 29 & 30, except that the words "game certificate," used in them, and also in 1 & 2 Will. IV., c. 32, shall be read as "licence to kill game."

Sec. 7.—Permits licences to be taken out for gamekeepers.

Sec. 8.—Allows licence for gamekeepers to be transferred to successors.

Sec. 9.—Provides that gamekeepers' licences are not available beyond the limits of the manor or lands to which they are appointed.

Sec. 10.—Licence must be produced by persons in pursuit of game, when asked for by any officer of Inland Revenue, or by lord of manor, or his gamekeeper, or by any person who has taken out a licence under this Act, or by the owner or occupier of the land on which the person shall then be.

In default thereof, Christian and surname must be given, with place of residence. Penalty for refusal, 20*l.*

Sec. 11.—A conviction under 1 & 2 Will. IV., c. 32, or 2 & 3 Will. IV., c. 68, forfeits the licence.

Sec. 12.—Commissioners to publish list of persons taking licences.

Sec. 13.—No person to sell game to licensed dealers without 3*l.* licence.

Sec. 18.—Licences (not gamekeepers') to be available in any part of the United Kingdom.

Abstract of Poaching Prevention Act.

The Act 25 & 26 Vict., c. 114, was passed in August 1862, with the intention of preventing the previously frequent breaches of the peace and murderous conflicts between poachers and keepers. This intention it has very fully realized, the diminution in such crimes being marvellously great since the period of its coming into operation.

Sec. 1.—Defines the meaning of the word "game" as including eggs of game, woodcocks, snipes, and rabbits as well as the usual articles. Also the words "justice" and "justices."

Sec. 2.—Permits any constable in any highway, street, or public place, to search any person whom he may have good cause to suspect of coming from any land where he shall have been unlawfully in search or pursuit of game; *or* any person aiding or abetting such persons, and having in his possession any game unlawfully obtained, *or* any guns, part of guns, or nets or engines used for the killing of game; and also to stop and search any cart or other vehicle suspected of containing game. And should any of the above articles be found upon such person or conveyance, they may be seized and detained, and the constable shall then apply to some justice for a summons. And if found guilty, such person shall forfeit a sum not exceeding 5*l.*, and shall forfeit such articles found, which shall be sold or destroyed. But if no conviction takes place, the articles shall be restored.

Sec. 3.—How penalties are to be recovered.

Sec. 4.—Provisions of 11 & 12 Vict., c. 43, extended to this Act.

Sec. 5.—Convictions not to be quashed for want of form, or removed by certiorari.

Sec. 6.—Power of appeal.

By three decisions of the superior courts (Brown *v.* Turner, Evans *v.* Botterill, and Fuller *v.* Newland), it has been laid down that the justices may infer from the circumstances of the case, as proved, whether the accused had been unlawfully on land in pursuit of game, and that it is not necessary that he should have been actually seen on it or coming from it.

Abstract of the Poisoned Grain Prohibition Act.

26 & 27 Vict., c. 113, sec. 1.—Recites expediency of preventing sale and use of poisoned grain.

Sec. 2.—Penalty not exceeding 10*l.* for selling poisoned grain.

Sec. 3.—Penalty for sowing, setting, &c., poisoned grain, not exceeding 10*l.*

Sec. 4.—Solutions or infusions, used for agricultural purposes, permitted.

Sec. 5.—Recovery of penalties.

Abstract of the Poisoned Flesh Act.

The 27 & 28 Vict., c. 115, prohibits the placing of poisoned flesh in plantations, &c.

Penalty for placing flesh in plantations, inclosed fields, &c., not exceeding 10*l.*

Not to apply to placing poison for the destruction of vermin in houses, ricks, &c.

Abstract of the Sea-Birds Preservation Act.

32 & 33 Vict., c. 17, sec. 1.—Defines Sea-Birds.

Sec. 2.—Penalty for killing between April 1st and August 1st not exceeding 1*l.*

Sec. 3.—Home Office to prosecute on application.

Sec. 4.—Offenders may be required to tell their names.

Sec. 5.—Moiety of penalty to go to informer.

Abstract of the Gun Licence Act.

33 & 34 Vict., c. 57, sec. 1.—Short title.

Sec. 2.—The term "gun" includes any firearm, air-gun, or other kind of gun from which any shot, bullet, or other missile can be discharged.

Sec. 3.—Duty on licence to use a gun, 10*s.*

Sec. 4.—Duty and licence to be under the management of the Commissioners of Inland Revenue.

Sec. 5.—Licence to be dated on day of issue, and to expire on March 31st next following.

Sec. 6.—Register of licences to be kept.

Sec. 7.—Penalty of 10*l.* for using or carrying a gun without a licence; but there are certain exemptions, viz., persons in the army, navy, and volunteers, when on duty; holders of game licences, and persons employed to carry guns for their use; the occupier of any lands carrying a gun for the purpose only of scaring birds or killing vermin on such lands, and also persons employed for the same purpose by holders of game licences; gunmakers and their servants; also carriers, when carrying guns in the ordinary course of business.

Sec. 8.—Where two or more persons carry a gun in parts in company, all are liable.

Sec. 9.—Licence to be produced on demand, or name and address declared, under a penalty of 10*l.*

Sec. 10.—Officers of Inland Revenue and constables may enter upon lands to demand production of licence.

Sec. 11.—Licence to be void if the holder be convicted of game trespass.

Sec. 12.—Not to interfere with any other Act requiring authority to keep firearms.

ABSTRACT OF THE WILD BIRDS PROTECTION ACT.

35 & 36 Vict., c. 78, sec. 1.—Definition of terms.

Sec. 2.—The birds named in the schedule may not be killed between March 15th and Aug. 1. Penalty 5*s.*

The schedule contains nearly 80 names of birds, including woodcock, snipe, swan, wild duck, teal, various kinds of plovers, and many smaller birds, as the nightingale, cuckoo, swallow, &c.

Sec. 3.—Persons offending may be required to give name and address. Penalty of 10*s.* for refusing.

Sec. 4.—As to trial of offences committed within the Admiralty jurisdiction.

Sec. 5.—Jurisdiction where offences committed on boundary waters.

TRESPASS PUNISHABLE BY ACTION AT COMMON LAW.

Any person who has a freehold estate in land may himself order off and remove all trespassers with just sufficient force. His tenant has also the same right, and may even exercise it against his landlord, unless the latter has a special agreement to the contrary. Every such trespass involves a certain amount of damage, which may be nominal, or to any greater extent, as the case may be; and an action may be brought to recover the same. Damages have accordingly been recovered—1st, for trespass while shooting; 2nd, for trespass while hunting—(the exemption while in *fresh* pursuit afforded by 1 & 2 Will. IV., c. 32, s. 35, does not apply here; but the law allows beasts of prey—*e.g.*, a fox—to be pursued); 3rd, for shooting into and striking the soil without personally being on it; 4th, for shooting over land with intent to frighten game; 5th, for inciting a dog to enter land; 6th, for digging out a fox or badger; 7th, for entering any building with the intention of killing a hunted fox, hare, or deer.

DOGS TRESPASSING cannot be shot; except they are in the act of damaging some property—*e. g.*, chasing game or poultry. Under a recent Act, when chasing sheep their owners may be made liable.

TRAPS, OR DOG-SPEARS, may be set by owners or occupiers of land, but not man-traps or spring-guns.

ACTIONS may be brought in the superior courts, or, if the damages are laid at less than 50*l.*, in the County Courts.

If PERSONAL NOTICE is given, or a printed caution wherein the lands are specially described, a trespass afterwards committed will be considered wilful, which will affect the costs. The following are the forms to be used, as recommended by Mr. Oke in his "Handy Book of the Game Laws"—

1st, as a printed Notice or board:

CAUTION.—Take notice, that all trespassers on any land on either side of the adjoining highways, for_____ in length and_____in depth, on each side of and opposite to this notice, will be prosecuted as wilful

trespassers under the Game Act, and otherwise, according to law.

C. D.

As an Advertisement:

Notice.—Notice is hereby given, that all persons found trespassing in search or pursuit of game on the estates of —— and ——, in the parish of —, the property of ——, will be prosecuted.

E. F., Steward.

Notice to a particular Person:

To Mr. A. B.

I hereby give you notice not to enter or trespass upon any of the lands or hereditaments (*if given by a tenant, say* in my occupation,) belonging to me (and, *if so*, in my occupation *or* in the occupation of E. F. and F. G.), situate at, &c., and called ——, for the purpose of pursuing, taking, killing, or destroying game (*or* for the purpose of hunting, coursing, shooting, fishing, or fowling), or for any other purpose, or under any other pretence or pretext whatsoever. And that in case you shall do so after the service of this notice (*or* in case, after service of this notice, you shall enter or trespass upon the said lands and hereditaments, or any part thereof, for any or either of the purposes aforesaid), you will be deemed a wilful trespasser, and dealt with (*or* proceeded against) accordingly.

Dated at —, this – day of —, 187

C. D.

Wildfowl may be shot anywhere without a game certificate, but the shooter must have a gun licence, and will always be liable to an action for trespass if found upon land which is private property.

Rabbits in Warrens, and Wildfowl in Decoys, are private property, and a person sporting with them is liable to an action for damages, without notice.

Tame Pigeons.—For shooting these without leave, penalty 20*s*., if they belong to an established dovecot, unless they are shot while injuring corn, when they must not be removed from where they are killed.

Sect. 8.—Scotch Game Laws.

The laws relating to game in Scotland are not nearly so simple as those of England, the Act 1 & 2 Will. IV., c. 32, which settled the general principles of the English law, not extending to Scotland, where the property in game still depends upon the common law, and instead of being in the tenant, as in the southern half of Great Britain, is in the landlord, where no special agreement to the contrary exists. In both countries a licence is necessary under the same Act (23 & 24 Vict., c. 90). In Scotland also "game" is not so clearly defined as in England, but the difference is very trifling, and is mainly of importance in dealing with each separate Act. A landed qualification to kill game is still necessary in Scotland, under the Act of 1621, c. 31, which provides, that no man shall hunt or shoot game who does not possess a "plough gate" of land (variously estimated at from 56 to 104 Scotch acres), under a penalty of 100*l*. But a person possessing this qualification may lease game to unqualified persons, as is now commonly done. The law of trespass is defined by the following Act, which bears some relation to the 1 & 2 Will. IV., c. 32, having been passed in the following year.

Abstract of the Act Regulating Trespass in Pursuit of Game.

2 & 3 Will. IV., c. 68, sec. 1.—Penalty on persons trespassing in the day-time, not exceeding 2*l*. Or if with face blackened, or to the number of five, not exceeding 5*l*.

Sec. 2.—Such trespassers may be ordered to quit the ground, and to give their names and addresses; or in case of refusal may be arrested and conveyed before a justice, and on conviction fined not exceeding 5*l*.

Sec. 3.—No person to be detained more than twelve hours without being taken before a justice.

Sec. 4.—Not to extend to hunting or coursing, when in fresh pursuit of game.

Sec. 5.—Permits the person having right to game, or his servants, to take game from trespassers.

Sec. 6.—Penalty for assault by trespassers not exceeding 5*l*.

The subsequent sections lay down the forms of procedure before justices, or by action for trespass.

The Act Regulating the Killing of Hares.

The Act 11 & 12 Vict., c. 30, applying to Scotland, is the same in effect as the English Act (see page 18), but

slightly varied in form to meet the difference in the previously existing laws of the two countries.

THE NIGHT POACHING ACTS.

These have been given at page 19, as extending also to England.

LICENCE TO KILL GAME.

The Act regulating the licence to kill game, extending to both countries, will be found at page 19.

POACHING PREVENTION ACT.

An abstract of this also is to be found at page 20.

CLOSE TIMES OF GAME AND MUIRBURN.

The seasons during which the various kinds of game may be killed are defined by the Acts 1707, c. 13, and 13 Geo. III., c. 54, and to some extent by the Licence Act (23 & 24 Vict., c. 90.) By the first of these Acts the close times are made to be as follows:—

Muirfowls not to be taken from	March 1 to June 20.
Partridges ditto,	March 1 to Aug. 20.

Penalty 20*l.*, Scots.

By the second they are—

Muirfowl and Ptarmigan	Dec. 10 to Aug. 12.
Heathfowl (black game)	Dec. 10 to Aug. 20.
Partridges . .	Feb. 1 to Sept 1.
Pheasants . .	Feb. 1 to Oct. 1.

5*l.* penalty for every bird so taken, or in default two months for each 5*l.*

MUIRBURN.

By the Act 13 Geo. III., c. 54, s. 4, every person who shall set fire to any heath, from the 11th April to the 1st November, shall forfeit 2*l.* for the first offence, 5*l.* for the second, and 10*l.* for the third, or in default of payment six weeks, two months, or three months' imprisonment respectively.

POISONED GRAIN PROHIBITION ACT.

This Act, extending to Scotland, has been described at page 20.

POISONED FLESH ACT.

Same as in England, &c., See page 20.

SEA-BIRDS PRESERVATION ACT.

Same as in England. See page 20.

GUN LICENCE ACT.

Same as in England. See page 20.

WILD BIRDS PROTECTION ACT.

Same as in England. See page 21.

TRESPASS AT COMMON LAW.

As in the case of the English game trespass statute, so in the 2 & 3 Will. IV., c. 68, the owner or occupier of land trespassed upon has his right of action at common law reserved, but he is not allowed to proceed in both ways. By the common law of Scotland the owner-in-fee has the exclusive right to the surface of his land, and can order off all trespassers; and, on their refusal to go, can use just sufficient force to remove them. A dog in pursuit of game cannot be destroyed. Fox-hunting is not a justifiable trespass as in England.

SECT. 9.—IRISH GAME LAWS.

The Irish laws relating to game are still more complicated than those of Scotland, and the list of Acts in force there extends to a round dozen. The ownership of game is in the tenant, as in England, and the word "game" includes deer, hares, pheasants, partridges, grouse, landrails, quails, moor-game, heath-game, and wild turkeys or bustards.

CLOSE TIMES.

At certain seasons of the year game may be bought or sold, but it may not be killed, which is an absurd premium on poaching. The following are the close times for killing it, according to 37 Geo. III., c. 21; 28 & 29 Vict., c. 54; and 37 Vict., c. 11:—

Deer (red male) shall not be killed from	June 10 to Oct. 20.
Ditto (fallow) ditto . .	Sept. 29 to June 20.
Heath game and grouse	Dec. 10 to Aug. 12.
Landrail, quail, partridges.	Jan. 10 to Sept. 20.
Pheasants . .	Feb. 1 to Oct. 1.

Hares—No close time since the passing of the Act 26 Vict., c. 19.

Irish Qualification.

By the 13th Rich. II., c. 13, none are allowed to take deer, hares, conies, nor other gentlemen's game by hunting, but such as have lands or tenements to the value of 40*s.* a year, nor a priest who has not 10*l.* a year; and by 10 Will. III., c. 8, no one shall have any hound, beagle, greyhound, or land spaniel (except whelps at walk) without 100*l.* a year freehold, or 1,000*l.* personal estate, except breakers and trainers expressly licensed.

Sec. 20.—Permits tenants to keep such dogs within manor with lord's consent.

There is, however, no penalty attached, and an indictment under the common law is the sole remedy.

Night Poaching.

This offence is under the same laws as in England and Scotland, as already described at page 19.

Licence to take Game.

The Act 23 & 24 Vict., c., 90, an abstract of which is given at page 19, is extended to Ireland by section 18; but the special Act in force there is 5 & 6 Vict., c. 81, of which the following are the sections :—

Sec. 1.—Recites 56 Geo. III., c. 56, but transfers the management and collection of the certificate duty (which was 3*l.* 3*s.*) to the Excise. These duties are, however, repealed by the Act 23 & 24 Vict., c. 90, and made to assimilate in amount throughout the United Kingdom.

Sec. 2.—Persons keeping dogs for killing game must take out a certificate, not being gamekeepers.

Sec. 3.—Gamekeepers must take certificates and register deputation.

Sec. 4.—Certificates granted by supervisor of Excise.

Sec. 5.—Penalty of 20*l.* for keeping game dogs without certificate.

Sec. 6.—Lists to be published.

Sec. 7.—Gamekeepers' certificates may be renewed on change of servants without fresh payment.

Sec. 8.—Compels production of certificate under penalty of 50*l.* On refusal the offender may be apprehended and taken before a justice.

By the 23 & 24 Vict., c. 113, s. 43, a licence for killing rabbits is dispensed with.

Poaching Prevention Act.

This Act is given at page 20.

Trespass in Pursuit of Game.

The Act 27 Geo. III., c. 35, comprises the following sections :—

Secs. 1, 2, 3.—Preamble and recital of 10 Will. III., c. 8.

Sec. 4.—Penalties for killing game on Sunday, or out of season.

Sec. 5.—Penalty of 10*l.* for taking game by night.

Sec. 6.—Higglers who have possession of game not the property of qualified persons, to forfeit 5*l.* (This section is in the main repealed by the English Game Licence Act.)

Sec. 7.—Applies to the selling of game, and is now repealed by English Licence Act.

Sec. 8.—Qualification for keeping dogs.

Sec. 9.—Repealed by English Licence Act.

Sec. 10.—Persons not authorized trespassing in pursuit of game, fined a sum not exceeding 10*l.*

Sec. 11.—Makes it necessary to the act of "looking for game," that the person shall have a "dog or dogs, gun or guns, net or nets, or some other implement for taking or destroying game."

Sec. 12.—Qualified persons may follow game into another manor.

Sec. 13.—Recovery of damages.

Sec. 14.—Rewards for killing otters, martens, weasels, &c.

Sec. 16.—Dogs of persons not qualified may be destroyed by virtue of justice's warrant.

Sec. 17.—Redress for damage.

Sec. 18.—Saves rights of lords of manors.

Sec. 19.—How offences are to be determined.

Sec. 20.—Date of prosecution.

Sec. 21.—Application of fines, &c

Sec. 22.—No person to be whipped.

Sec. 23.—Appeals.

Muirburn.

The Act 10 Will. III., c. 8, limits the time for burning heath, &c., to the interval between June 14 and February 2.

The Poisoned Grain Prohibition Act.

This, as described at page 20, extends to Ireland.

POISONED FLESH ACT.

Same as in England, except that poison may be laid after notice to constabulary (see page 20).

SEA BIRDS' PRESERVATION ACT.

Same as in England. See page 20.

GUN LICENCE ACT.

Same as in England. See page 20.

WILD BIRDS' PROTECTION ACT.

Same as in England. See page 21.

KILLING HARES AND RABBITS.

Hares are "game," but there is no close time. The owner or occupier of land may kill hares without licence, and so also may persons hunting or coursing.

Hares and rabbits in warrens or special breeding-grounds may not be taken, under the Larceny Consolidation Act, during the night, without committing a misdemeanour. If in the day-time, the penalty to be a sum not exceeding 5*l.*

Rabbits are not game, but under the poaching Prevention Act they are so considered.

THE COMMON LAW AS TO GAME.

This is in the main the same as in England.

CHAPTER II.

THE GUN AND THE MODE OF USING IT

SECT. 1.—THE MODERN FOWLING-PIECE.

FLINT GUNS, MUZZLE-LOADERS AND BREECH-LOADERS.—As in the early part of the first half of the nineteenth century the detonating muzzle-loader superseded the flint gun, from its greater certainty and rapidity of ignition, so in the beginning of the second half, the breech-loader completely displaced the muzzle-loader for all ordinary purposes connected with fowling. It is true that, for wild shooting and at the pigeon trap, the muzzle-loader is still preferred by some few crack shots, on account of its supposed superior power of penetration, but not one in a thousand new guns of that make is now produced for the English market. About 1854-5 the late Mr. Lang, of Cockspur-street, introduced the Lefaucheux breech-loader (invented by a Parisian gun-maker of that name), but it had previously stood the test of ten years' pretty general use in France, and had in that country been brought nearly to its present perfect condition as used with the pin-cartridge. When Mr. Lang first introduced this action, it presented the form commonly known as the "single grip," but this soon showing the effects of wear, it was replaced by the improvement known as the "double grip," and this is still the most wearing of all the various inventions for the same purpose. About the same time the celebrated Mr. C. Lancaster, of Bond-street, patented his first action with which was used a cartridge showing no external pin, and allowing not even the slightest escape of gas, which always attends the pin cartridge. The great cost of this gun, and to some extent the complexity of its mechanism, in addition to the fact that Mr. Lancaster refused to license its sale by other gun-makers, prevented its general introduction into use, and at the expiration of ten years from the time when Mr. Lang brought out the novelty, the ordinary Lefaucheux pin-gun had gradually crept into the hands of nine-tenths of British game shots, in spite of the most strenuous objection on the part of those who thought that no good gun could come from France. In opposition to them it had been alleged again and again by Mr. Lang, and his somewhat noisy supporter Major Levison, that the new gun was not only safer, quicker, cleaner, and more handy, but that it was stronger in its shooting than its predecessor. This last pretension was however over and over again disproved in the public trials inaugurated by myself, and up to 1875, when the "choke bore" was introduced, the superiority in penetration

still rested with the old muzzle-loader in general opinion. Within the last ten years Mr. C. Lancaster's example in dispensing with the pin has been generally followed — Mr. Daw, of Threadneedle-street, adopting an invention of a Mr. Schneider in which the gun closed with a "snap," and a host of other gun-makers taking out patents for slight modifications of this snap-actioned "central fire,"—the latter name being given from the cartridges without pins which are used with it, and are so called as a distinction, though the ignition is as central in the one as in the other. Nearly all these "latest improvements" present to the shooter a gun combining exceeding rapidity and safety in loading with a pattern in shooting such as was unknown ten years ago, and very nearly if not quite as great penetration as the hardest-hitting muzzle-loader. As now made, the action lasts a reasonable time, though it may require attention from the maker every two or three seasons at the cost of a few shillings, if it is in the hands of a man who fires his two or three thousand shots in the season. There is literally no escape of gas, so that at the end of a hard day's work even a kid glove is not soiled by contact with the hammer or barrels, and the interior only requires to have a "Turk's head" through it at the end of the season, followed by an oiled rag—the exterior being of course attended to according to the nature of its exposure to wet and especially to salt water.

These advantages as compared with those of the muzzle-loader are so overpowering that the breech-loader has now completely superseded the latter in the English market, and the old-fashioned gun is valueless except for exportation. A great number of those in the hands of sportsmen at the time of the introduction of the breech-loader were converted by the addition of a new action to the old barrels, locks, and stock, but a large proportion were too thin in the breech for this purpose, and these either passed into the hands of game-keepers, or were sold for an "old song." The recent invention of "choke boring" to be presently described has, if need be, still further increased the superiority of the breech-loader, because it cannot be used without its aid, on account of the reduction of the size of the muzzle forbidding the introduction of a wad which would fit the calibre of the barrel at the breech end, that is to say where the charge lies. Of course this point is imperative because unless the fitting is perfect the shot in one barrel is loosened by the discharge of the other, and this is well known to be attended with great risk of bursting the barrel. It may therefore be assumed that the new invention has finally extinguished the muzzle-loader, and I should omit its description altogether except on the score of curiosity and to a certain extent for the use of those who are induced to visit some remote colony where cartridge-cases are not to be bought. Even in such out-of-the-way places however a breech-loader may be used with the powder and shot to be purchased there, if the colonist has taken the precaution to furnish himself with a few metal cases adapted to the chambers of his gun, by the aid of which he may pursue his sport after his stock of paper cases is exhausted.

The Metal Cases above alluded to are sometimes made exactly like the paper cases except in material, as is ordinarily done in America, and then require to be recapped at home, which necessitates a sufficient stock for one day's consumption. These are now exceedingly well made in this country by the National Arms Company at Birmingham, and they are so strong as to last almost for ever. They are so easily recapped that a few minutes will suffice to restore any moderate number to a shooting condition, and by their means the breech-loader is now as cheap in its load as the muzzle-loader. Mr. Charles Lancaster used a steel case with a nipple in its base, on which an ordinary cap was placed after loading, but the brass cases are better.

Component Parts of all Shot Guns.

All guns used from the shoulder consist of:—1st, the barrels, with the breech; 2nd, the locks, with their trigger guard; and 3rd, the stock, connecting these several portions together, and affording a convenient means of handling them. To these must be added, in the case of the muzzle-loader, 4th, the nipple, and 5th, the ramrod; and in that of the breech-loader, 6th, the cartridge-case, with, in many guns, 7th, the extractor.

The Single-barrelled Shot Gun,

which fifty years ago was extremely common, is now almost unknown, the difference in price between it and a "double" having changed from 400 per cent. to about 50, or even less. Where cheapness is a great object, as in the case of schoolboys, old-fashioned single-barrelled muzzle-loaders are still occasionally sold, but such articles are very rarely now made, and the only single guns at present ordered are for professional pigeon shots, and for use at long distances with large charges as duck guns, in which it is now completely eclipsed by the new "choke boring" confined to breech-loaders. The superior quickness in getting a second, third, and fourth shot with the double breech-loader completely outweighs the one shot to which the old muzzle-loader is confined, and practically the latter is almost as much out of date as "old Brown Bess" in the British army.

DOUBLE BARRELS, whether for muzzle-loaders or breech-loaders, are made in the same way and of the same materials, but the proportions in regard to the tapering thickness of the tubes are not exactly the same, the new gun requiring stouter breech ends in proportion to the muzzles than the old. The materials chiefly in favour are: 1st, stub Damascus, composed of steel and iron in about equal proportions: 2nd, the same two materials with a greater amount of steel, also differently worked up together, and known as laminated steel. Both the stub Damascus and the laminated steel are made into tubes by twisting bars spirally around a mandril and welding them together, by which it is supposed that superior strength is given: but when it is remembered that a separation can as easily be effected between the halves of any portion of the steel as if the whole barrel was of this material, the fallacy of this argument is at once exposed. As in all cases, so here, the strength of the barrel is in its weakest part, and in point of safety the superiority of the stub Damascus over laminated steel is not now appreciated. Belgian Damascus has a finer pattern than the English metal, and has not so much steel in its composition, so that it is by no means so powerfully elastic in giving penetration, and I scarcely think it well suited to the new "choke bore." Damascus is safer than laminated iron, as being less liable to burn, and without doubt, taking into consideration the liability to this accident, Damascus is on the whole the safest material for gun-barrels. It may readily be distinguished from laminated iron by the sharp lines exhibited on its surface, whereas the latter is mottled and has no decided lines whatever. When the barrels are each forged, bored, and ground externally, they are nearly always attached together at their breech ends by brazing for three or four inches, and for the rest of the distance by most barrel-makers, but occasionally all through, by tin solder, which latter material allows of their being separated or contracted at the muzzles, if they shoot wide or cross one another at 40 yards, without disturbing the brazing. During the process of brazing a piece of steel called the "lump" is attached by the same means to the under side, aided by a dovetail cut in the barrels in the Erskine patent, or in the Parsons patent there is half the lump forged on each barrel and the two are joined together by brazing. In a third plan a thin piece is brought up between the barrels, and this is certainly the strongest method. Without doubt the "Parsons" lump is on principle the safest which has yet been invented to avert the accident which sometimes occurs when from defective brazing the barrels and the lump part company, but some gun-makers object to it, that the welding on of a piece of pure steel interferes with the proper forging of the barrels, and that the remedy is therefore worse than the disease. Accidents of any kind occur so rarely in proportion to the number of guns used that it is extremely difficult to ascertain from actual practice which is really on the whole the safest plan of attaching the lump, but I have no doubt that where common care is used the ordinary lump brazed on is as safe as in the nature of things can be expected. Erskine's method has certainly no objection against it, except that it requires a slight increase of metal in the barrel, from which to cut the dovetail; but it must be remembered that there is no strength in it if the brazing which connects the barrels is imperfect, so that after all the safety depends on this important process in his lump nearly if not quite as much as in the ordinary method.

Breeching and Actioning.—The pair of muzzle-loading barrels after being put together are each tapped, and a temporary screw-plug put in, containing a hole by which the first charge of proof powder is ignited. When this test has been gone through, the final screw plugs are adjusted, having in each a chamber with a screw hole for the nipple and a hook attaching them to the false breech by means of the "hut." In this stage the final proof is made. This simple form of breech is replaced in the breech-loader by a much more complicated plan, consisting in boring out rather more than two inches of the breech ends of the barrels to form a chamber large enough to receive a paper case of the same internal diameter as the barrel, and additionally closed by a brass capsule in which is inserted a cap containing the means of ignition. To prevent this cartridge case from being driven out by the explosion, a plain surface of iron is carefully adjusted to the capsule and barrels, the fit requiring to be good, not in order to keep *in* the gas resulting from the ignition of the powder, but to keep *out* the wet during rain. For this purpose several plans have been tried, one (that of Lefaucheux) in which a false breech is hinged to a joint about two inches in front of the breech and below the barrels: a second (Bastin's and Bacon's patents) consisting in sliding it backwards and forwards, so as in each case to allow the insertion or extraction of the cartridge case. In a third plan (Jeffries') the barrels are turned sideways on a hinge, while very recently Mr. W. W. Greener has adopted a fourth, in which the two barrels (one on the top of the other) are turned sideways and locked on his double-bolt system. The first two plans are to a certain extent also combined in the original plan of Mr. C. Lancaster, and in that of Mr. Dougall. But whatever method is adopted of bringing this false breech to close the open mouths of the barrels, some secure method of fastening must be adopted—in which consist the chief differences existing between the numberless actions of the present day, to be presently described. The length of barrels generally adopted is about 30 inches, and the favourite guage is 12, which means that a spherical ball fitting it would weigh one twelfth of a pound avoirdupois; and the same proportion applies to all other guages.

Proving.—As before stated, muzzle-loading guns are provisionally proved before their breeches are screwed in, the final or definitive proof being made when completed, and the locks jointed up. Breech-loading guns are also submitted to two proofs, the first before they are "actioned," and the second when completed and ready for stocking. The provisional proof is effected by firing certain large charges of powder, with a cylinder of lead rammed down in the usual way; and the charge varies from nearly 8 oz. for a No. 1 gauge down to 7 drachms for a 50 gauge.

The marks of the London and Birmingham proving houses are here given.

The provisional proof is indicated by the two upper marks, the definitive by the lower on the cut. The latter, though greatly less than the provisional, is still a sufficiently heavy one to test the strength of the barrels and action. It should however be known that there is nothing to prevent the reduction in metal both of the barrels and the action after proof.

The Lock comes next under examination, and whether for the breech-loader or muzzle-loader, consists of the same parts. Its principle is simple enough, being merely a mode of exploding the cap on the nipple or in the cartridge-case by giving it a sharp blow. It is therefore only in delicacy of mechanism that its beauty consists; for any bungler can make a lock which will discharge a cap. An artist, however, will make one which shall discharge it with certainty, and with its *full force exerted* at the end of its stroke, so that in the muzzle-loader it confines the gas resulting from the explosion of the powder within the barrel, and does not allow it to escape, as many weak and badly-made locks do; or in the pin breech-loader it prevents the pin from

blowing out. He will also take care that the trigger acts with delicacy, and yet that the cock is quite safe at half-cock. The spring, also, should not be so strong as to overpower the thumb, as in cocking carelessly it may explode, and consequently do serious damage. For muzzle-loaders the force of this spring is about 14lbs., but for breech-loaders it is somewhat less. The various parts of the lock are—1st, the cock, or striker; 2nd, the lock-plate; 3rd, the main-spring; 4th, the tumbler upon which the spring acts by means of the swivel, and in unison with which, on the outside of the lock-plate, the cock rises or falls; 5th, the tumbler-screw, which fastens the tumbler and cock together; 6th, the scear, which catches the tumbler at half or whole cock; 7th, the scear-spring, which holds the last in its place; 8th, the bridle, which caps the tumbler, and receives the scear-screw; 9th, the side nail, which fastens the lock to the stock. Locks are now *sometimes* made back-actioned, that is to say, the main-spring and lock-plates are thrown back, for the purpose of avoiding cutting away the action. But this weakens the stock, and moreover the back-actioned lock does not speak so well as the old bar-lock, for which reason most of our best makers still retain the forward action. An important improvement has lately been made, by which, without any complication, the hammer rises nearly to half-cock after the blow. This is the invention of a Birmingham lock-maker of the name of Stanton (now of Wolverhampton), and has gradually crept into use *pari passu* with the central-fire gun, for which it is specially designed. It is so arranged that although a blow sufficient to explode the cap is given, the hammer is at once brought back to half-cock, —that is to say, about a quarter of an inch from the striker. The latter is thus released from pressure, and its point is of course driven back behind the level of the false breech, by which the danger of igniting the cap during loading is reduced to a minimum. This improvement is effected by making both ends of the main-spring bear on the tumbler, the longer and more powerful limb being attached to it by a swivel as usual, and the shorter meeting a lump when the hammer is thrown down to "bearer." It is for this reason not suited to either the muzzle-loader or the pin cartridge, as it will allow the cap to fly off in the one instance, and permit the pin to escape in the other. Occasionally the tumbler itself is made to propel the striker, as in Deely's patent, which has been adopted by a great many gun-makers, and has recently become quite the fashion, being combined with the Westley-Richards, the Greener, the Maleham, and the Powell actions to produce a hammerless gun, — to be presently described. In the pin-gun the same part of the hammer gives the blow as in the muzzle-loader, and such is also the case in most of the central-fires, but in others the blow is given by the rounded breast of the hammer, the head being only employed as a stop. Trigger-guards are too well known to need description. Various plans for preventing the trigger being accidentally pulled have been invented, but as far as I know not one is now adopted, except in very rare cases, by our careful sportsmen, the Stanton lock being specially useful in preventing accidents. One rule, and one only, insures safety—never to allow the muzzle to be directed against any living object except that for which it is intended.

THE STOCK is generally made of walnut, and should be bent to the angle most convenient to the party intending to use it. It should also vary in length, according to the length of the arm, the average being fourteen and a half inches from the butt-end to the trigger. It should be as much reduced at the gripe, or handle, as the strength of the wood will allow; and the butt-end is hollowed out from above downwards, to fit the shoulder, and slightly rounded from side to side. In the muzzle-loader this is always protected by a plate of iron; but, as it is not rested against the ground in the breech-loader, it is often omitted in the latter for the sake of saving weight. The stock extends up, and is hollowed out to receive the barrel, which is attached to it by means of the loops or eyes, confined in their places by sliding bolts. Into the part of the stock which receives the breech a piece of iron called the false breech is screwed; and into that part which is beneath the lock, the trigger-plate and guard containing the trigger are firmly and neatly inserted. In the Lefaucheux breech-loader, as well as in all hinged guns, the stock is

divided at the hinge, and in it, as well as in many other guns, there is a considerable interval, which is filled by the action. The coldness of the iron is objected to by many sportsmen, and hence Mr. Westley Richards, of Birmingham, introduced, some years ago, a stock in which wood extends from end to end of the stock. The length and bend have been already alluded to; but another point in the stock must be attended to, namely, the *casting off*, which is a slight lateral bend inclining the aim inwards, and of great importance in a perfect stock. The loading also should be remembered. This is merely a piece of lead inserted under the butt-plate, and as near the lower part as possible; it is solely intended to balance the weight of the barrel, but a good artist now avoids this unnecessary weight by lightening the barrels forward.

THE COMPONENT PARTS PECULIAR TO THE MUZZLE-LOADER are the nipple and the ramrod.

THE NIPPLE is merely a short piece of tubing, which is tapped into the breech at an angle of about 60° with the axis of the barrel. The bore of this tube enlarges towards the outer extremity, and receives a part of the powder which is forced into it from the breech cavity by the pressure of the ramrod. Its exterior should be round for about three-eighths of an inch to receive the cap, then square, to facilitate its removal, and afterwards tapped for the purpose of fixing.

THE RAMROD completes this gun. It is, as its name implies, a rod for loading, and lies in the circular eyes attached to the lower part of the barrel; but many of the great *battue* men nowadays dispense with this, and carry it separate from the gun. It has a copper, or, what is better, a copper-gilt head, and a worm for drawing the charge, covered with a cap, at the smaller end. Such is a description of the single gun; the double one differs only in having two complete barrels with their necessary appendages, the locks and triggers.

THE PIN BREECH-LOADER is complete without anything more than the parts I have already described; but the central-fire, having no projection by which the empty case can be withdrawn, requires a special apparatus for that purpose, known as THE EXTRACTOR. This slides backwards and forwards rather less than half an inch, and occupies one third of the edge of the chamber receiving the cartridge, which being provided with a flange, is drawn back whenever the gun is opened.

THE CARTRIDGE-CASE is composed of a thick brown-paper cylinder two and a half inches long, and varying in bore according to that of the gun; one end is open to receive the charge, which is the same as in the ordinary gun, the other is closed by a brass capsule, which overlaps the paper, forming a strong joint, and in the "gas tight" case of Messrs. Eley being still further strengthened by an internal brass coil. These cases are either furnished with a pin projecting about half an inch from the brass rim, or they show the cap in the middle of the base. The pin case has, in the middle of the inner surface of the capsule, a small brass chamber, firmly supported in its place, and containing the small cap which fires the charge. A brass pin eight-tenths of

PIN CARTRIDGE.

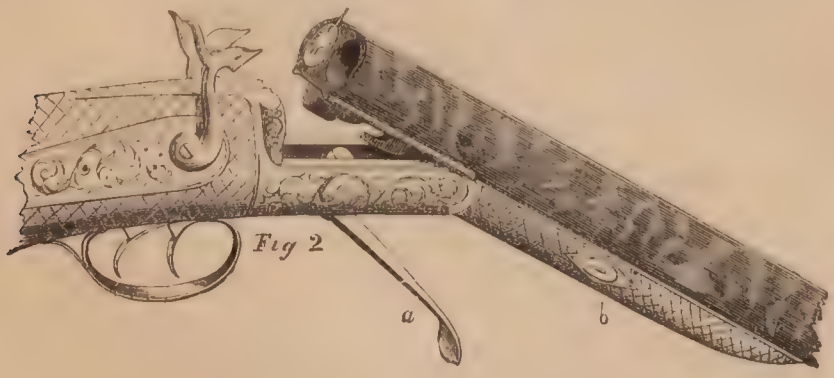
an inch in length, and about a twelfth of an inch in diameter, passes through the capsule and one side of the small chamber, and receives the cap on its point in the same way as the ordinary nipple. The other end of the pin projects beyond the cartridge about a quarter of an inch, and lies in a notch between the barrel and the false-breech, beyond which it stands up to receive the blow of the striker. All this will be more readily understood by a reference to the engraving. This cartridge-case is sold with the cap all ready for receiving the powder and shot; and this is the best plan of using it, because then dry powder may always be obtained, and it is as easy to charge as an ordinary gun. The price is from 30*s.* to 50*s.* per thousand, containing a cap; and this additional cost is the only drawback to the use of the breech-loader with which I am acquainted.

SECTION 2.—VARIETIES OF THE BREECH-LOADER.

THE ORIGINAL LEFAUCHEUX BREECH-LOADER, as introduced by Mr Lang, and of which an engraving is here given, is now entirely superseded by more recent inventions. Indeed, the pin

cartridge itself is out of fashion, and nearly every new gun made since the year 1868 has been a central-fire of some kind or other. At first, it was objected, against this latest improvement, that it is impossible to know, from an inspection only, whether it is loaded or not; but to this the reply is, that it is so very easily unloaded, that it never ought to be left out of the sportsman's hands with its cartridges in their chambers. It is quite true also that the eye readily detects the presence of the pin cartridge-case, but whether this is empty or loaded is not so easily seen, and fatal mistakes have arisen in this way. Let it be firmly impressed on the shooter, that even during his mid-day lunch he should withdraw his cartridges from his gun, and never by any chance leave them in, and no mistake can possibly arise; they come out exactly as they went in, and may be placed in the pocket without soiling it, so that no objection on that score can reasonably be urged.

The following is a description of the original Lefaucheux gun, which will be better understood by a reference to the engraving :—The barrels are united to the stock by a strong hinge, which is set at liberty by moving the lever



THE ORIGINAL LEFAUCHEUX BREECH-LOADING GUN

(*a*), a quarter turn to the right, as shown in the accompanying figure. This turn releases a wedge which connects the barrels firmly to the stock when ready for firing. After turning the lever, the barrels may be raised from the stock and are then ready for loading, for which purpose a cartridge case is used, containing within itself all the requisites for the gun's discharge, &c. In loading, the shooter turns the lever, the barrels then lower themselves by their own weight, exposing the open breeches, in each of which he places the cartridge, then turns back the lever, and the gun is ready for use, the whole operation being only an affair of a few seconds. On reloading, it is necessary to draw out the discharged cartridge, before inserting a fresh one. In this gun, the old breech-chamber is entirely done away with, and the barrels merely drop down against the flat surface of the false-breech, just as in the revolving pistol. They are bored larger at the breech-end to admit the cartridge, the calibre of which should correspond with that of the rest of the barrel, and thus form with it a continuous tube; the barrel, therefore, has a bevelled shoulder at the part where the cartridge ends, and there is consequently a small distance in which the internal bores of the barrels and cases are not continuous.

THE FIRST IMPROVEMENT upon this gun consisted in the addition of a second wedge, constituting what is called the "double grip" action, now generally considered to be the strongest of all, but when it does wear it cannot readily be adjusted. Like the single grip, it closes itself partially when the barrels are brought into position with force, but it requires the hand to bring the lever quite home, and on that account it is rejected by many game shooters, especially for battues, in favour of the snap action, which closes on the principle of the ordinary spring door-lock.

Of these actions there are more than fifty varieties, but the whole may be arranged under four groups, consisting of—1st, the old Lefaucheux or lever-grip action, including the single and double grip already described, and used

either with pin or central fire; 2nd, the various snap-bolts of Messrs. Purdey, Needham, Westley Richards, Horsley, Cogswell and Harrison, W. W. Greener, Marrison, Powell, Paton, Pape, Harlow, &c. &c.; and 3rd, the sliding actions of Bastin, Lancaster, Dougall, and Bacon. With the exception of the Bastin and Bacon guns, all are hinged, like the original Lefaucheux, about three inches in front of the break-off; and when released, by moving the lever on its axis or drawing the spring-bolt as the case may be, the muzzles drop, and the open breeches are exposed ready for withdrawing the empty cases and inserting others ready charged. The Bastin barrels, on the contrary, are moved forward in the same line, by the depression of a long lever acting on them through the intervention of a short arm attached to it and to the fore end of the slide in which they run. I shall now proceed to examine into the merits and demerits of each of these plans. I have omitted purposely Mr. Needham's and other needle guns, as they are now virtually withdrawn from the market.

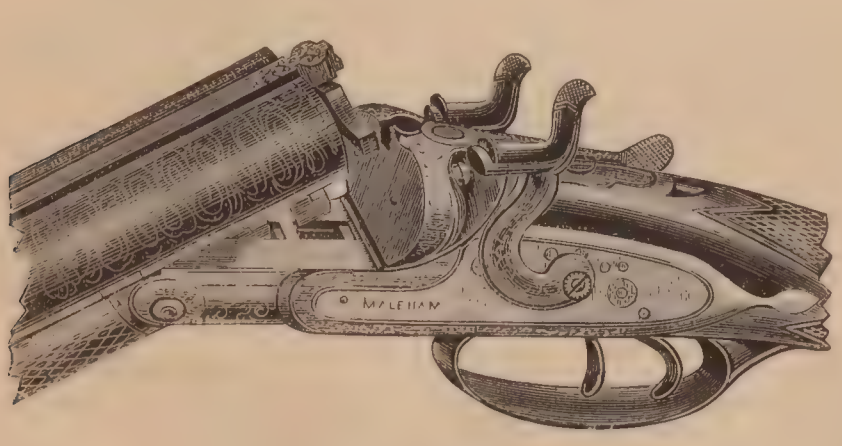
SNAP-BOLT ACTIONS have, within the fifteen years (1863-1878), been invented by the score, and almost every week sees a new one brought out. Mr. Westley Richards was, I believe, one of the first to introduce a modification of the French breech-loader on this principle, having shown one at the International Exhibition at South Kensington in 1862. By his improved plan the upper surface of the barrels is held in apposition to the corresponding part of the false breech by means of a hook, which drops into the latter while their lower parts are held to it through the ordinary hinge. To keep the barrels from rising, a hinged lever is arranged between the hammers, which has a cam fitting into the hook; this lever is easily pushed to the right by the thumb, a common scear-spring concealed beneath the wood driving it back into its place. This is the neatest, simplest, and most ingenious of all the actions with which I am acquainted; and having used it for the last seven years, I can confidently recommend it as standing wear and tear remarkably well, if properly oiled and kept free from rust. It is adapted either to the pin or central-fire cartridge, the striker for the latter purpose being divided into two portions so as to give a blow in the long axis of the cartridge. Mr. Horsley, of York, has adopted the thumb-piece placed exactly like that of Mr. Westley Richards, and acting in the same way as his first lever; but he has not introduced the dove-tailed projecting hook, and his snap-bolt drops into the lump beneath the barrels. No doubt this position of the thumb-piece between the hammers is a very convenient one, but in other respects Mr. Horsley's gun does not differ from the ordinary snap-guns. Mr. Purdey a few years ago introduced a snap-gun so arranged that the lever works below and drops into the trigger-guard, which is made broader to receive it. It is a neat piece of workmanship, but somewhat awkward to manage, and he has lately modified it, by working the snap bolt with a lever placed like that of Westley Richards—and this action is now very generally adopted. Messrs. Cogswell and Harrison add to their snap a self half-cocking motion, which is very simple and effective. It consists in the projection upwards, by means of the lever, of a stud to receive the head of the hammer, by which it is raised to the half-bent; and of course, when the lever is in its place, the stud is dropped, and the hammer can descend upon the cartridge-pin. They also have a very useful central-fire adaptation. In Mr. Needham's self half-cocking gun the hammer is raised by the lever through the agency of a cam acting on a projection on its breast; but in each case the false-breech is cut away to receive these members to an extent which is sufficient to weaken the angle to a dangerous degree, unless the iron used is of the very best description. Mr. Jeffries, of Norwich, some ten years ago, patented an action in which, instead of the barrels dropping, they turn out sideways to expose their open breeches. To prevent their rising when discharged, a projection from the lower surface fits into a slot cut in the angle of the false-breech; and the barrels are kept in place by a spring catch, relieved by a small thumb-piece at the side. The "wedge-bolt gun," as Mr. Harlow denominates his invention, is a misnomer, as there is no wedge concerned in the action, and it is an ordinary snap-gun merely. Mr. Paton's action, which that celebrated Scotch gun-maker has brought into general use in Scotland during the last few seasons, closely resembles Mr.

Purdey's, differing only in the lever not dropping into the trigger-guard, but standing below it and altogether free. In the details of the manufacture, however, Mr. Paton is quite distinct from his London rival, as he follows the late Mr. W. Greener in altogether rejecting brazing, both for putting together his barrels and fixing on the steel lump for the snap-bolt to lay hold of. With tin solder he finds that both these points can be satisfactorily accomplished, the lump being fitted all across both barrels, and into the angle between them. This avoids the necessity for overheating the iron in the act of brazing, and if carefully performed the tinning is no doubt perfectly efficacious, but, unless well done, there is risk of the surfaces coming apart.

Mr. Paton, also, by keeping the horizontal limb of his action very deep, is able to dispense with the iron at the sides, and lets his bar-locks into the wood. I confess that this part looks too weak in my judgment, but Mr. Paton tells me that the experience gained by the trial of numerous guns made on this principle, and of many others converted from muzzle-loaders, has satisfied him of its perfect safety and efficiency, and I have had strong evidence of its durability from good sportsmen in Scotland as well as India.

Mr. Powell's action is very neat and quick, equally adapted for both kinds of cartridge, his central-fire being greatly admired by many good sportsmen. The snap is easily adjusted when worn, and, excepting that the false-breech is cut away more than I like it, has my warm commendation.

Mr. W. W. Greener's is also a good snap-bolt, dropping sideways into a projection like that of Mr. Westley Richards, and his gun has stood the test of several years' use without flinching, especially when strengthened by the addition of the treble grip. A combination of the Westley Richards lock and lever with the Purdey snap makes a strong and very neat gun, and is used by several good makers, including Mr. Maleham of Sheffield. Its appearance and construction will be readily understood by reference to the annexed engraving, and there is no doubt that either this action or Mr. W. W. Greener's may be relied on for any charge which can possibly be required, even for elephant rifles.



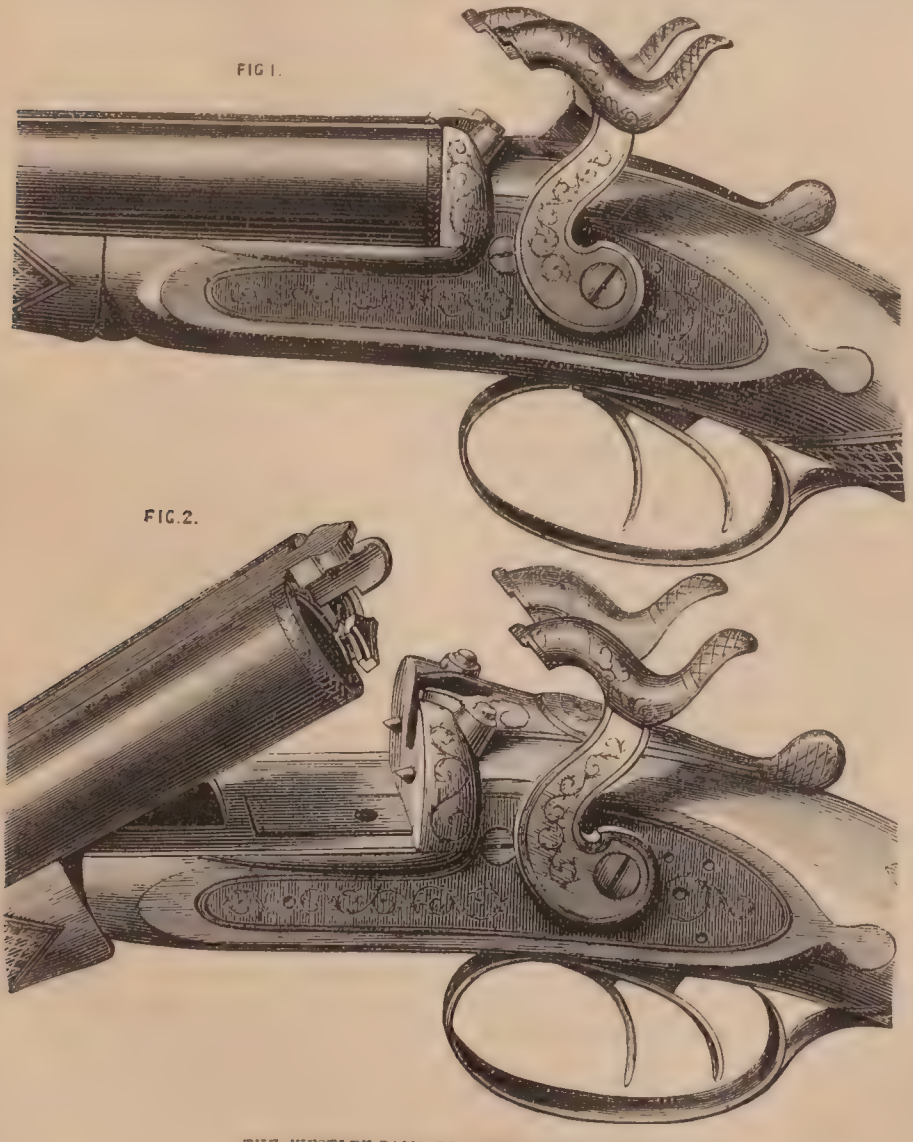
MALEHAM'S BREECHLOADER.

THE SLIDING ACTIONS of Bastin, Lanaster, and Dougall, are quite distinct appearance, as well as in principle; ut they have this element of weakness common, namely, that they all depend solely upon bolts for receiving the shock of the discharge, and cannot receive any help from the wedge or the lump. In Bastin's action the barrels have a dove-tailed projection from their

lower surfaces which fits into a corresponding slot cut in the metal fore-end, and allows them to slide backwards and forwards in the direction of their long axis. A long lever is jointed to the projection, and also to a short connecting rod, the other end of which is connected with the fore-end. When, therefore, the lever is forcibly brought down, it forms a compound lever, having its fulcrum in the connecting rod, and the object to be moved being the barrels, they slide forward the length necessary for exposing the cartridges; these having their pins received in a small hole of the hammers, remain behind, and are thus drawn out of their chambers, when by half-cocking they drop out if the gun is tilted sideways. This action is very strong as long as the bolts connecting the rod with the lever and fore-end remain unworn; but as they speedily wear by use, it requires occasional repair, and is not easily adjusted. Moreover, it must be made half a pound heavier than the Lefaucheux and its improvements, owing to the mass of iron required for the slide on the fore-end. Bastin's gun is therefore very little used in this country. Mr. C. Lancaster's and Mr. Dougall's guns, as I before remarked, though sliding forward, do so on an entirely different plan, and to a much less extent. Like the Lefaucheux, they are hinged, but Mr. Dougall's lockfast has the addition of an eccentric bolt, which, when worked by a side lever, either drives the barrels forward to open them for loading, or backward to close them. This renders it necessary that there shall be two discs projecting from the face of the false-breech to enter the barrels, and another from the lower part of the barrels themselves—the two former fitting into the chamber, and the latter into a socket formed for it in the breech. Thus the barrels and false-breech are, as it were, interlocked, and if they could be kept together by any powerful means the action would no doubt be a strong one. But all the recoil is taken by the eccentric, than which it is scarcely possible to conceive a weaker means of resisting this severe blow. It is well known that the large hinge bolt of the Lefaucheux gun soon wears away, though it is merely the passive agent in checking the drop of the barrels, and is moreover a complete circle, taking the blow and friction on its entire surface. Here, however, the bolt is an active agent in opening and closing the gun, and also the receiver of the blow from the explosion—but in both cases only on the eccentric, which thus has a tendency to wear with great rapidity; and such in practice is found to be the case. Hence, though this action received a medal at our International Exhibition of 1862 and has been most favourably introduced to the public in other ways, it has not generally taken with them, its slowness, when compared with the "snap action," or even with the "grip," being a fatal objection. To meet these disadvantages it will neither shoot unusually strongly, nor wear even reasonably well as a shot-gun; but for a limited number of discharges, as in the case of a sporting rifle, it has been found to serve the purpose for which it is intended, and has been reported on favourably by the late Captain Forsyth ("Black-Buck"), in the *Field*, and also in his work "On the Sporting Rifle and its Projectiles." Mr. Bacon, a private gentleman of Leicestershire, has more recently invented another sliding action, somewhat on the principle of Needham's needle-gun, which is now quite superseded by his snap action. In Mr. Bacon's gun, however, the breech, though it contains the lock, and is itself lodged in the breech end of the barrel, works backwards after being turned a quarter round so as to dislodge its two cams. Its weak points, as far as I can judge, are in the spiral mainspring, and in the extra length required in order to make room for the slide; but it has many elements of good, not the least of which is that a single barrel is opened and loaded with great rapidity.

The Central-fire Principle was for a long time only carried out in England by Mr. C. Lancaster, of Bond-street (the well-known resuscitator of the oval-bore rifle), on a plan to which I have already alluded; but Mr. Daw, of Threadneedle-street, about ten years ago, introduced a foreign invention—that of M. Schneider, Rue St. Antoine, Paris, which is by many preferred to it, and is adopted by M. Lepage-Montier, the celebrated gun-maker of the latter city. Mr. C. Lancaster, finding that there was a strong desire

for a moderately cheap central-fire, brought out a modification of the double-grip, which he offered to the trade throughout England, and it has been adopted by a great many country makers. In all of these guns a striking pin is arranged in the false-breech, so as to project into the middle of the base of the cartridge-cases, and transmit to the cap the blow received from the hammer. In Mr. Lancaster's first gun this is done in the exact axis of the barrels; but in his second, and still more in Schneider's (Daw's), the pin is oblique, and passes from the situation occupied by the nipple of the percussion gun to the centre of the false-breech. This gun, therefore, has out-



THE WESTLEY-RICHARDS CENTRAL-FIRE GUN.

wardly very much the appearance of the detonator. In all three the empty cases are brought back by making the inner third of the lip of each breech-end moveable, and attached to a slide, which is worked either by the hinge, as in Daw's gun and in Mr. C. Lancaster's second patent, or by the lever, as in his first. By its means the cartridge-cases, whether loaded or empty, are protruded from the chambers about the third of an inch, when they may be laid hold of by the fingers, and removed; on replacing them by fresh ones, the latter cannot be pushed home until the gun is closed, but in that act, as soon as they

meet the false-breech, they are driven into their places. Altogether, the plan is very neat and ingenious, and has become more and more popular, in great measure, probably, from the introduction of an extractor. In point of cleanliness, also, the central-fire has the advantage, for this gun need never be cleaned all through the season; the only care necessary being to wipe off any damp or wet, and when dry to oil the surface and working parts.

Mr. Westley-Richards' central-fire gun has been already alluded to at page 32, but it is necessary here to describe it more minutely. Of the action I have already spoken, and the adaptation to the new cartridge will be readily understood by reference to the engraving over-leaf. Fig. 1 shows the gun closed ready for shooting, from which its great neatness and the amount of wood in the hand will be evident. Fig. 2 indicates the hook in which the snap-wedge enters to keep the gun closed; also there will be seen the striker divided in two, so as to allow of a straight blow in the long axis of the barrels. A host of other well-known gun-makers have patented modifications of the central-fire gun, but the differences are so slight that it is unnecessary to recapitulate them.

The one objection to central-fire guns which is to be specially regarded is that if the striker is allowed to project with the slightest degree of force from the break-off the cap is liable to be exploded by it as the gun is closed. It is therefore necessary to provide some sure means by which this accident shall be prevented, and gun-makers have contrived the following plans:—

1. A spiral spring is inserted around the striker, bringing it back when the hammer is raised; but sometimes this spring breaks. It is useless, too, when the gun can be closed with the hammer down, for in that case the power of the mainspring overcomes the spiral spring, and the accident takes place nevertheless, and, indeed, with still more probability.

2. Mr. Westley-Richards and some others so arrange their hammers that when down it is impossible to open or close the gun. This plan has its extreme simplicity to recommend it, but it is also perfectly efficacious, as the opening of the breech of necessity drives back the striker

3. By connecting the striker and hammer, as in Pape's, Greener's, and other similar plans, or by providing that the gun cannot be opened or closed when the hammer is down (which is done by making the striker project considerably), security is obtained. It will be observed that this plan supposes the hammer to be of necessity at half-cock before the gun is opened or closed, as a necessary precaution; so that Westley-Richards' plan is equally efficacious and absolutely certain in performing what it professes.

4. By providing a means of half-cocking the gun when it is opened.

5. By connecting the strikers with the lever which opens the gun, as in Powell's plan.

6. By using Stanton's rebounding lock, which always brings back the hammer, and relieves the striker of its pressure.

Of these various plans I think Stanton's the best, inasmuch as it is self-acting; it does away with the necessity for half-cocking, and is absolutely certain in its action. Indeed, it is now almost universally adopted by the best gun-makers, except for self-cocking guns, in which it is not required.

The Action.—Among the many really good plans offered in the market, it is extremely difficult for the tyro to make a choice of which he will not afterwards be induced to repent by the interference of his friends. Every sportsman looks on his gun as part of himself, and many a man would rather be found fault with in his own person than in that of his breech-loader. In point of performance, the action itself has little or nothing to do with it, for the shooting is entirely dependent on the barrels and the weight of iron behind them. If the barrels are of good metal properly bored and regulated, and there is sufficient weight to back up the charge, the shooting will be first-rate, whatever may be the nature of the action. For this reason, in the *Field* gun-trial which I conducted in 1866, I not only registered the performances of the various guns, but I left it to a committee to settle which was then, in their opinion, the best action. It should be remarked here that the guns experimented on were not many of them by London makers of any great note, neither was Mr. Westley-Richards

represented, but among the names were those of Mr. Holland of Bond Street, London, Mr. Henry of Edinburgh, Mr. Pape of Newcastle, Mr. W. W. Greener of Birmingham, Mr. Fletcher of Gloucester,—all well-known firms, and capable of turning out excellent work. As however eleven years have since elapsed, it is scarcely desirable to publish the report in the present edition of this book.

In order to enable my readers to compare the performances of the above guns in 1866 with the shooting of the "choke bores" and others in subsequent trials, I have adapted the table of the former to that of the latter in the following account of the "choke bore."

Sect. 3.—Choke Bores.

During the year 1874 several English gun-makers of note had announced to their own customers and the public generally, that they were in possession of a new principle of boring guns, by which their shooting powers were increased, both in pattern and penetration, to the extent of from 20 to 50 per cent. Amongst these Mr. W. W. Greener of Birmingham was the most prominent, and in reply to his invitation I had arranged to go down and try his improvement in the autumn of that year, but was prevented by accidental circumstances. In December 1874, however, Mr. Partridge, of Easton Court, Herefordshire (a well-known good shot), addressed a letter to the *Field*, giving a description of the performance of one of Mr. Greener's guns at the ordinary gun-maker's plate, which so much astonished me that, being still unable myself to go to Birmingham, I commissioned a gentleman to undertake the task, the result being given in the *Field* of Jan. 9, 1875. As, however, Mr. Greener had loaded his own cartridges, doubt was thrown upon the trial; and to clear this up as far as possible, I determined to repeat them myself, and fixed a date for that purpose, which was announced in the *Field*. In the interval, a member of the firm of Scott and Son, of Birmingham, called upon me, and at his instigation I engaged to try one of their guns on the same day. This trial came off as announced, and having taken the precaution to see all the cases loaded, and to furnish myself the soft shot with which some of them were filled, the objections previously made were done away with, and it was established that by the new plan the alleged increase of power was carried out, at all events very nearly, to the extent claimed.

Evidently, however, there was still much to be learnt, for while Mr. Greener had been unable to do much with soft shot, Messrs. Scott's gun performed quite as well with it as with the hard (then and still improperly called "chilled"). Other gun-makers also claimed to be able to perform with their guns as well as Mr. Greener and Messrs. Scott; and partly to settle their claims, but mainly to satisfy the readers of the *Field*, I determined to institute the "gun trial of 1875," at which not only should these pretensions be decided, but the comparative powers of the ordinary boring and of choke boring should be carefully tested under similar conditions. The proprietors of the *Field* most liberally came forward and engaged to pay the whole cost of the trial; and in addition they engaged to give two silver cups, one of the value of 40 guineas to the maker of the best choke-bore, and the other of 10 guineas, to the maker of the best gun bored on the old principle. The conditions allowed the calibre of the latter to be enlarged up to five-thousandths of an inch beyond the diameter of the muzzle, on the supposition that such an enlargement might be accidental; but the winner taking advantage of this permission, purposely cut out his barrels enough to improve their shooting sufficiently to beat all the guns of the old school—complying with the letter of the law though transgressing its spirit. The disappointment to the next highest on the list was of course considerable, but, as far as the trial of the new system as compared with the old was concerned, this modified plan was advantageous, since it showed that the improvement could be regulated to a nicety from 50 per cent. in pattern down to 10 per cent. or probably even less. Curiously enough, however, the winning gun had not done very well in the first round—its average pattern being only 101·5, though its penetration was high; and it seemed to require a certain number of shots to be taken to develop the slight choke by means of the fouling, which was unusually hard owing to the excessive heat and dryness of the weather. At all events, the

average pattern rose from 101·5 to 148·5 (aided only by the selected group instead of the central one), whereas but three of its five competitors had increased at all, and they only six or seven points each. Indeed, after carefully comparing the patterns made by the six guns left in each class to compete in the second round, it is clear that the selected group is very little if any advantage, and the central may be taken as equivalent to it in comparing the trial of 1866 with that of 1875. As regards penetration there is, however, a great difference, as the score of 1866 is taken from the greatest number of sheets penetrated by *one* pellet, whereas in 1875 *three* pellets had to break the sheet before it could be counted, which would on the average make a difference of five or six sheets in favour of 1866. On the other hand, in 1875 this number is multiplied by six, giving the relative importance to penetration which it deserves.

In the following tables I have changed the form of those of 1866 into that adopted in 1875, except in regard to the number of sheets penetrated by three shots, which could not now be ascertained, and consequently the comparison must be taken with a considerable discount off the penetration in the 1866 trial.

A comparison of these three tables will show the little progress that had been made in the interval between 1866 and 1875, until the appearance of the choke-bores, except perhaps in penetration, which it is very difficult to estimate exactly, unless the paper used is the same for all. But taking the figures as they stand, the highest in 1866 was 279·5 and the lowest 256, whereas in 1875 the highest at forty yards (irrespective of Mr. Turner's modified choke) was 297·5, the increase being chiefly in penetration, whilst the lowest was 263.

"FIELD" TRIAL OF 1866.

Calculated on the principle adopted in 1875, except that the pattern is taken in a central group on a 30-inch circle, but with the Penetration figures multiplied in the same way by 6. Shot used 1¼ oz. of Walker & Parker's No. 6, 280 pellets to the ounce.

Maker and Description of Gun, with kind of Shot and Powder.	Pattern.	Penetration of one Pellet multiplied by 6.	Figure of Merit.
40 YARDS.	L.B. R.B.	L.B. R.B.	
1. PAPE, W. R., Newcastle.—12-gauge; pin; 7¼ lb.; 30 in. laminated steel; 3 dr. C. & H. No. 6 powder	123·2 131	145·2 159	
Averages	127·1	152·4	279·5
2. PAPE, W. R., Newcastle.—12 gauge; pin; 7 lb. 1 oz; 30 in laminated steel; 3 dr. C. & H. No. 6	117 134	144 144	
Averages	125·3	144	269·3
3. GREENER, W. W., Birmingham.—12-gauge; pin; 7¼ lb.; 30 in. laminated steel; 3 dr. C. & H. No. 5	119 124·2	157·2 146·4	
Averages	121·4	151·8	273·2
4. HOLLAND, J., London.—12-gauge; C. F.; 7 lb 2 oz.; 30 in. drawn steel; 3½ dr. C. & H. No. 5	116·5 116	146·4 162·6	
Averages	116·3	154·5	270·8
5. PAPE, W. R., Newcastle.—12-gauge; pin; 7 lb. 1 oz., 30 in. laminated steel; 3 dr. C. & H. No. 5	135·5 101·1	139·2 139·8	
Averages	117·3	139·5	256·8
6. HENLY, A., Edinburgh.—12 gauge, pin or C. F.; 6 lb 12 oz.; 30 in. Damascus; 3½ dr. C. & H. No. 6	127 108·2	138 139·2	
Averages	117·4	138·6	256

"FIELD" TRIAL OF 1875.

CLASS 2, for Choke-bores of 12-gauge.—First Round with a central group of 30 inches at 40 yards, from which six were selected to compete in Second Round, at 40 and 60 yards, with a selected group of 30 inches. Penetration of three pellets multiplied by 6. Shot, soft or hard at discretion, 1⅛ oz. by weight. Powder, Curtis and Harvey's, or Pigou's; weight at discretion.

SECOND ROUND.

Maker and Description of Gun, with kind of Shot and Powder.	Pattern. L.B.	Pattern. R.B.	Penetration multiplied by 6. L.B.	Penetration multiplied by 6. R.B.	Figure of Merit.	Final Figure of Merit.
GREENER, W. W., Birmingham.—12-gauge; 7 lb. 4 oz.; 30 in. laminated steel; chilled shot; 3¼ dr. Pigou No. 4 powder. 40 yards...	236	206	180	168	Winner of Cup.	
	214	173	174	180		
	214	233	186	186		
	257	222	192	192		
	191	208	192	198		
	210	251	210	198		
Averages	214·5		188		402·5	
Ditto, 60 yards	86	81	84	96		
	68	91	84	96		
	84	76	96	96		297·4
	105	97	90	96		
	97	112	114	126		
	106	100	108	120		
Averages	91·9		100·5		192·4	
DAVISON, R., Morpeth.—12-gauge; 7 lb. 3 oz; 30 in. laminated steel; chilled shot; 3 dr. C. & H. No. 6 powder. 40 yards	189	204	180	186		
	187	133	186	168		
	186	195	216	174		
	193	134	216	168		
	170	203	222	216		
	190	137	204	156		
Averages	176·7		191		367·7	
Ditto, 60 yards	94	74	108	102		
	120	110	78	84		
	116	89	96	84		286·6
	109	148	102	126		
	100	113	96	90		
	131	93	102	102		
Averages	108		97·5		205·5	
PAPE, W. R., Newcastle-on-Tyne.—12-gauge; 7 lb. 4 oz.; chilled shot; 3¼ dr. C. & H. No. 6 powder. 40 yards	206	145	240	216		
	89	178	162	222		
	192	160	210	180		
	192	190	174	204		
	179	181	186	159		
	174	192	222	162		
Averages	173·1		194		367·1	
Ditto, 60 yards	90	90	114	102		
	99	70	66	78		
	74	107	66	84		275·7
	71	117	96	114		
	84	97	84	114		
	107	91	102	96		
Averages	91·4		93		184·4	
BAKER, F. T., London.—12-gauge; 7 lb. 1 oz.; 30 in. Damascus; chilled shot; 3⅛ dr. C. & H. No. 4 powder. 40 yards	191	200	216	228		
	181	186	174	210		
	78	190	150	210		
	187	105	162	186		
	204	171	180	228		
	146	197	180	180		
Averages	169·6		192		361·6	
Ditto, 60 yards	105	58	78	78		
	109	99	96	96		
	87	82	78	84		267·2
	101	91	96	102		
	103	55	78	48		
	73	61	108	108		
Averages	85·3		87·5		172·8	

Class 2, Second Round (*continued.*)

Maker and Description of Gun, with kind of Shot and Powder.	Pattern.	Penetration multiplied by 6.	Figure of Merit.	Final Figure of Merit.
	L. B. R. B.	L. B. R. B.		
BAKER, F. T., London.—12-gauge; 7 lb. 4 oz.; 30 in Damascus; chilled shot; 3¼ dr. C. & H. No. 4 powder. 40 yards	214 174	198 222		
	174 159	180 198		
	199 166	198 180		
	170 115	174 186		
	194 210	192 180		
	164 185	168 204		
Averages	177·2	190	367·2	
Ditto, 60 yards	90 85	114 84		
	71 64	96 84		
	94 51	108 54		
	62 83	66 102		264·3
	104 84	90 120		
	27 104	— 102		
Averages	76·5	85	161·5	
DAVISON, R., Morpeth.—12-gauge; 7 lb. 2 oz.; 29 in. laminated steel; chilled shot; 3 dr. C. & H. No. 6 powder. 40 yards	133 160	180 210		
	200 200	186 192		
	195 100	174 156		
	224 172	168 180		
	186 207	210 156		
	196 108	162 114		
Averages	174·1	171·5	345·6	
Ditto, 60 yards	97 40	90 72		
	86 97	108 90		
	86 33	102 12		250·1
	85 126	72 96		
	90 98	90 120		
	85 91	102 120		
Averages	84·5	89	173·5	

CLASS 3, for Ordinary Bores.—The barrel not to be enlarged up to five-thousandths of an inch beyond the diameter of muzzle. Conditions as in Class 2.

SECOND ROUND.

(At 40 yards and 60 yards, with selected group of 30 inch circle at both distances.)

Maker and Description of Gun, with kind of Shot and Powder.	Pattern.	Penetration multiplied by 6	Figure of Merit.	Final Figure of Merit.
	L. B. R. B.	L. B. R. B.		
TURNER, T.—12-gauge; 6 lb. 10 oz.; 30 in. Damascus; soft shot; 3 dr. C. & H. No. 6 powder. 40 yards	94 100	120 180	Winner of Cup	
	165 171	162 180		
	197 123	186 150		
	168 170	192 192		
	192 151	180 126		
	153 148	168 144		
Averages	148·5	165	313·5	
Ditto, 60 yards	41 71	72 72		
	52 27	48 —		
	64 79	90 102		227·2
	58 66	102 114		
	75 82	102 102		
	26 60	72 114		
Averages	57·0	80	140·9	

Class 3, Second Round (*continued.*)

Maker and Description of Gun, with kind of Shot and Powder.	Pattern.	Penetration Multiplied by 6.	Figure of Merit.	Final Figure of Merit.
	L. B. R. B.	L. B. R. B.		
DAVISON, R.—12-gauge; 7 lb. 3 oz.; 30 in. laminated steel; chilled shot; 3 dr. C. & H. No. 6 powder. 40 yards	79 140	144 156		
	146 157	186 168		
	156 157	162 180		
	142 163	162 180		
	83 103	132 168		
	100 122	186 198		
Averages	129	168·5	297·5	
Ditto, 60 yards	91 77	84 90		
	65 82	84 90		
	71 74	84 78		225·8
	51 86	78 102		
	69 68	78 78		
	48 72	78 72		
Averages	71·1	83	154·1	
DAVISON, R.—12-gauge; 7 lb.; 30 in. laminated steel; chilled shot; 3 dr. C. & H. No. 6 powder. 40 yards	133 79	168 144		
	170 152	144 162		
	92 137	156 180		
	133 143	174 156		
	146 128	198 156		
	143 137	168 150		
Averages	132·7	163	295·7	
Ditto, 60 yards	73 65	60 72		
	54 61	60 72		
	66 61	108 72		216·1
	72 68	78 66		
	83 83	96 72		
	27 69	24 78		
Averages	65·1	71·5	136·6	
JEFFRIES, L.—12-gauge; 7 lb. 4 oz.; 30 in. Damascus; chilled shot; 3¼ dr. C. & H. No. 5 powder. 40 yards	100 133	174 156		
	140 115	144 156		
	145 102	144 120		
	78 101	150 138		
	133 100	144 138		
	79 137	174 156		
Averages	113·5	149·5	263	
Ditto, 60 yards	75 73	102 108		
	57 52	90 84		
	55 63	84 108		211·5
	60 59	90 108		
	80 87	84 102		
	72 78	78 84		
Averages	67·5	92·6	160·1	
GREENER, W. W.—12-gauge; 7 lb.; 30 in. laminated steel; chilled shot; 3¼ dr. Pigou No. 4 powder. 40 yards	145 125	210 180		
	122 135	156 138		
	112 142	126 162		
	103 128	108 156		
	157 139	138 198		
	147 120	120 162		
Averages	131·2	154·5	285·7	
Ditto, 60 yards	63 61	90 72		
	47 61	— 72		
	56 70	30 90		210·2
	54 58	90 84		
	60 73	48 114		
	79 66	96 84		
Averages	62·3	72·5	134·8	
MALEHAM, C. H.—12-gauge; 7 lb.; 30 in. Damascus; soft shot; 3 dr. C. & H. No. 6 powder. 40 yards	136 149	162 216		
	91 74	156 162		
	113 117	186 156		
	108 142	186 216		
	78 112	120 180		
	156 64	197 72		
Averages	111·6	167	278·6	
Mr. Maleham retired from the 60 yards.				

The trial of 1875 so completely settled the claims of the "choke bore" to the attention of sportsmen that every gunmaker was obliged *nolens volens* to adopt it at the urgent demand of his customers, before the conclusion of the 1876-7 season; and during the summer of 1877, the mark (†), which denotes the "choke bore" in the pigeon-shooting reports recorded in the *Field*, appeared opposite the name of most of the prominent shots. Mr. Cholmondeley Pennell and Mr. Jaffray were the first to prove its superiority, but their improvement under its use was so marked that their example was soon generally followed, and nearly all the guns now used at Hurlingham and the Gun Club are more or less choked. Soon after this, improvement in guns became an "accomplished fact," shooting-men were divided as to the claims of the Schultze powder, which has now for some years been manufactured by a company in Hampshire, with a London Office at No. 8, Bucklersbury, E.C.,—Colonel Whyte, and other sportsmen of high repute, maintaining that while it gives as good a pattern as the black powder, its penetration is higher. With this advantage, they alleged, is coupled the fact that it gives out scarcely any smoke, and does not foul the barrel nearly so much as its rival. *Per contra*, however, it was said to vary so much in its strength as sometimes to be useless and at others so strong as to injure the action and even burst the barrels. To settle these conflicting accounts, I determined to institute a trial which should exhaustively test the comparative merits of the two powders, and at the same time give an opportunity to the leading gunmakers of shewing what progress had been made during the last two years in each class of guns, and for this last reason I shall introduce an abridged report of the trial in this place. It is almost impossible entirely to separate it into the two departments of *powder* and *gun* trials, but as far as may be I shall confine my attention here to the latter, and refer to the former when treating of powder *pure* and *simple*. Before introducing this report, it must be premised that the disputed points to be settled between the powders were first, their comparative strength in producing penetration; secondly, their comparative regularity in explosive force, so as to give as uniformly good a pattern as is consistent with the mechanism of the shot-gun; and thirdly, their comparative freedom from danger. As to smoke and fouling it is not disputed that the Schultze powder is very superior to the black. In order, therefore, to test the above claims it was necessary to construct a new "figure of merit," since the old plan gave no means of ascertaining the uniformity of pattern, nor did it give any indication of danger. In addition to this necessity I was compelled to have recourse to a machine-rest of some kind since shoulder-shooting would be still more objectionable than in the trial of guns alone for many reasons, the chief of which is that an increased number of shots was required, forbidding the trial from a single shoulder, and leading to a charge of inequality in skill if more than one were employed. Hence a machine-rest became a necessity, but fortunately I was enabled to construct one which not only gave excellent shooting, but also recorded the amount of recoil in pounds, and thus indicated the comparative explosive force exerted by the powders, which may be regarded as bearing upon, first, the comfort to the shooter, secondly, the regularity in pattern and penetration, and, thirdly, the degree of danger from excessive force. With this machine all the competitors were satisfied, and its superiority over the shoulder for the purposes of competition has been conclusively demonstrated. With regard to a test of penetration, I was obliged to content myself with the ordinary gunmaker's brown paper pad, as sold by Messrs. Pettitt of Frith Street, Soho, but before any future competition I trust that some more reliable methods may be invented. As between the different guns shot at any specified time, the test is quite sufficient, but it cannot be relied on for comparison between trials made at different times, in proof of which I may adduce the different results given by the same gun (Mr. F. Baker's) in 1875, in the first trial, and in that for "wear and tear," also by Mr. W. W. Greener's different guns bored in the same way, but with increasing skill and care, and yet falling off in penetration, first in the "wear and tear" trial of 1875, and secondly, in the great trial of 1878, as compared with that of 1875. That the last is not due to the machine-rest I have proved by repeated trials on the same day with

the same gun, shot with similar charges from it and the shoulder alternately.

With the above "lines" to influence me, I proceeded to construct a "figure of merit," which should still take penetration as its foundation, and for the purpose of comparison, in an unchanged form, that is to say, that the number of sheets penetrated by three shots should be multiplied by six, as in 1875. The next thing was to introduce a test of regularity of pattern, for it is admitted that there is no difficulty in obtaining any *average* that may be desired up to 220 or 230, which few sportsmen desire. The *bête noire* of the gunner now-a-days is the wild shot which the "choke bore" so often gives, and which was constantly displayed in the trials of 1875, the patterns varying from 230 down to 50, which last is worse than a miss-fire. Hence I constructed the "figure" on the principle of penalising these wild shots by deducting the difference between the lowest pattern and the average pattern from the penetration, and also the recoil above 50 lbs., as well as the variation in the recoils, the whole giving a figure of merit as follows :—

Average penetration multiplied by 6, say		180
Difference between lowest pattern and average, say . .	28	
Recoil above 50 lbs., say.	34	
Difference in recoils, say	3·50	
		65·50
Figure of merit . .		114·50

Under these conditions the three leading black powder-makers competed with the Schultze Powder Company, each side entering three guns in each class, the first composed of 6 choke-bores, and the second of 6 cylinders, and in every case each gun to be shot 25 rounds at 40 yards, first with the powder of its enterer in any desired charge, and 1⅛ oz. chilled shot, and afterwards with corresponding charges of each of its competitors. This necessitated 900 shots in each class, or altogether 1,800 rounds, which were all shot from my machine-rest to the entire satisfaction of the competitors, with the following results, the expense being borne by the proprietors of the *Field*, as in 1875.

The guns entered for the choke-bored class were all by Mr. W. W. Greener of Birmingham, and Mr. Maleham of Sheffield. In the cylinders Mr. F. Baker represented Messrs. Curtis and Harvey, Messrs. John Hall and Sons, and one chance of the Schultze Company, their other two chances being entrusted to Mr. Maleham and Messrs. Powell and Sons of Birmingham, while Mr. W. W. Greener undertook the management of Messrs. Pigou, Wilks, and Laurence's powder. Thus the several competitors were mainly represented by the most prominent performers of 1875, the only addition being in the case of Messrs. Powell and Sons of Birmingham, who did not appear on that occasion, but whose reputation for the production of first-class cylinders stands very high.

The great length to which the report of this trial necessarily extended prevents my inserting it entire—and I shall content myself with giving two of the most remarkable scores under the new "figure of merit," and shall then add the highest scores made when computed under the old one, to serve as comparisons with those made at the trial of 1875.

Commencing with Mr. W. W. Greener's "choke-bore," we find that in point of regularity of pattern, which formed the chief element in the competition, the performance of this gun was most remarkable, and far surpassed anything which was done in 1875, as well as the patterns made by its competitors in 1878, but in penetration there is an apparent falling off, probably owing to the difference in the two qualities of paper used, and possibly in some measure to the dry weather of 1875. The recoil given was higher than I have previously placed the point of comfort to the shooter as tested in 1866, but the diminished friction of the machine-rest will account for at least 10 lbs., and if measured in the same way as in 1878 I should now fix 80 lbs. as the average recoil which can be borne with comfort in a day's shooting, instead of 70 lbs. as before.

With regard to the recoil of the "choke-bore" as compared with the cylinder, the question which had been hitherto unsettled was decided in favour of the cylinder, but only by a very small difference, the average recoil of the "chokes" being 86·85, whilst that of the cylinders was 85·26.

Table I.—Choke-Bore Gun, made by W. W. Greener, weight 7 lb. 3 oz., laminated steel barrels 30 inch long, shot with 1⅛ oz. chilled shot No. 6, at 40 yards:—

POWDER. Curtis & Harvey, No. 6, 3¼ dr.						POWDER. John Hall & Sons' No. 6, 3¼ dr.					
Left Barrel.			Right Barrel.			Left Barrel.			Right Barrel.		
Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.
23	224	88	27	230	87	26	213	90	23	152	91
26	232	86½	23	213	85	24	205	89	25	168	90
26	232	88	22	209	86	27	189	90	27	182	89
26	218	87	31	230	87	28	192	89	26	200	90
28	228	87	23	230	86	27	202	89	22	186	89
30	217	87	25	205	86	27	219	89	26	199	90
29	207	87	23	213	86	24	178	90	27	207	89
25	230	88	27	218	86½	27	196	90	25	141	88
25	224	87	26	235	88	23	169	89½	23	175	88
26	226	86	25	204	86	23	200	91	28	184	89
26	234	88	22	203	86	28	193	89	28	167	89
25	196	86	28	232	87	24	185	90	26	181	89
26	212	90	—	—	—	26	218	91	—	—	—
Average penetration × 6 ... ... 154·32						Average penetration × 6 ... ... 156·00					
Average pattern ... 220·08						Average pattern 188·04					
Difference in pattern 24·08						Difference in pattern 41·04					
Av. recoil above 50lbs. 86·96 ... ... 85·96						Av. recoil above 50lbs. 90·52 ... ... 87·56					
Difference in recoil 5·00						Difference in recoil 3·00					
Figure of Merit ... ... 88·36						Figure of merit ... ... 66·44					

POWDER. Schultze, 47 grains.						POWDER. Schultze, 47 grains.					
Left Barrel.			Right Barrel.			Left Barrel.			Right Barrel.		
Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.
26	235	88	22	272	86	24	295	87	24	171	85
26	197	87	31	230	88	24	231	85	25	228	85
27	207	90	29	230	88	27	239	87	29	259	86
28	183	88	25	175	88	25	151	83	27	248	84
26	222	88	23	141	87	25	252	85	26	229	84
31	214	89	24	205	89	27	185	85	26	251	84
27	199	89	25	190	88	25	205	85	26	239	86
27	185	87½	28	192	89	23	173	85	27	242	82
30	200	90	26	159	88	29	215	85	31	222	86
32	191	90	27	181	88	28	219	83	30	202	85
32	180	90	26	201	89	25	197	84	28	228	84½
27	162	87	24	196	88	27	243	85½	24	148	84
24	214	94	—	—	—	30	237	83	—	—	—
Average penetration × 6 ... ... 161·52						Average penetration × 6 ... ... 158·88					
Average pattern 194·04						Average pattern 216·76					
Difference in pattern 59·04						Difference in pattern 68·76					
Av. recoil above 50lbs. 88·04 ... ... 105·28						Av. recoil above 50lbs. 84·72 ... ... 108·48					
Difference in recoil 8·00						Difference in recoil 5·00					
Figure of Merit ... ... 55·94						Figure of Merit ... ... 60·04					

It will be seen by comparing these tables that the superiority of the choke-bore over the cylinder is not so marked as in 1875, in spite of the wonderful per-

formance of Mr. Greener's bore in point of regularity of pattern, which was even greater than that of Mr. Baker's almost equally wonderful cylinder.

Table II.—CYLINDER GUN, made by F. T. Baker, weight 7 lb., Damascus barrels 30 inch long, shot with $1\frac{1}{8}$ oz. chilled shot No. 6, at 40 yards :—

POWDER.

JOHN HALL & SONS' LETTER A, $3\frac{1}{4}$ dr.

Left Barrel.			Right Barrel.		
Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.
25	149	85	23	122	$86\frac{1}{2}$
22	153	86	22	117	88
24	149	87	24	135	$87\frac{1}{2}$
21	129	$86\frac{1}{2}$	16	118	86
27	153	87	25	132	86
25	113	89	22	118	$87\frac{1}{2}$
25	160	85	23	146	86
20	141	86	22	158	87
25	142	87	25	139	85
24	124	87	23	156	88
24	168	$87\frac{1}{2}$	21	149	87
21	122	88	25	160	88
20	132	$87\frac{1}{2}$	—	—	—

Average penetration × 6 ... ... 137·76
Average pattern 139·40
Difference in pattern 26·40
Av. recoil above 5olbs. 36·84
Difference in recoil 4·00 ... ... 67·24

Figure of Merit ... ... 70·52

POWDER.

PIGOU, ALLIANCE, No. 4, $3\frac{1}{8}$ dr.

Left Barrel.			Right Barrel.		
Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.
21	130	83	24	150	84
21	86	83	24	141	84
23	139	$84\frac{1}{2}$	19	152	83
21	117	$83\frac{1}{2}$	25	151	84
26	136	84	23	161	84
21	135	83	22	127	84
19	111	83	20	138	$83\frac{1}{2}$
22	121	84	17	123	$82\frac{1}{2}$
20	142	82	22	151	82
22	150	84	18	116	84
18	127	83	22	107	85
19	111	84	21	117	83
19	151	84	—	—	—

Average penetration × 6 ... ... 126·96
Average pattern 131·60
Difference in pattern 45·60
Av. recoil above 5olbs. 33·52
Difference in recoil 3·00 ... ... 82·12

Figure of Merit ... ... 44·84

POWDER.

SCHULTZE, 42 grains.

Left Barrel.			Right Barrel.		
Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.
27	123	86	22	81	$85\frac{1}{2}$
24	137	83	23	127	86
20	124	85	22	129	85
24	125	84	24	145	86
27	146	86	24	123	86
25	136	84	25	131	86
24	127	86	24	99	86
23	98	87	26	109	87
24	115	86	24	131	85
26	138	84	27	105	86
31	138	84	28	150	86
27	129	86	28	146	85
23	110	83	—	—	—

Average penetration × 6 ... ... 149·28
Average pattern 124·88
Difference in pattern 43·88
Av. recoil above 5olbs. 35·34
Difference in recoil 4·00 ... ... 83·22

Figure of Merit ... ... 66·06

POWDER.

SCHULTZE, 42 grains.

Left Barrel.			Right Barrel.		
Penet.	Pat.	Recoil.	Penet.	Pat.	Recoil.
22	88	84	22	93	86
23	103	$83\frac{1}{2}$	21	126	85
24	125	84	25	153	85
21	130	80	27	125	85
33	97	85	17	82	84
20	127	$83\frac{1}{2}$	24	131	86
30	166	84	27	153	85
24	144	85	25	140	$84\frac{1}{2}$
25	162	84	25	133	85
26	78	83	25	139	84
28	138	84	25	130	$85\frac{1}{2}$
23	158	84	23	159	82
24	146	$84\frac{1}{2}$	—	—	—

Average penetration × 6 ... ... 146·16
Average pattern 129·04
Difference in pattern 51·04
Av. recoil above 5olbs. 34·22
Difference in recoil 6·00 ... ... 91·26

Figure of Merit ... ... 54·90

I now proceed to calculate the "figures of merit" of the guns on the same principle as in 1875 as follows—adding the recoils given by each without importing that element into the comparison.

CHOKE-BORED GUNS.—SUMMARY OF AVERAGES.

Description of Powder used, and weight of charge.	Penetration × by 6.	Pattern.	Figure of Merit.	Recoil.
1. Messrs. Pigou, Wilks, and Laurence's Gun, made by W. W. Greener.				
Curtis & Harvey's No. 6, 3¼dr.	154·32	220·08	= 374·40	86·88
Hall & Son's No. 6, 3¼dr.	156·00	188·04	= 344·04	89·52
Pigou and Wilks' No. 4, 3¼dr.	141·84	210·84	= 352·68	85·66
Schultze, 47 grains	164·88	202·00	= 366·88	85·08
,, 47 grains	161·52	194·04	= 355·56	88·54
,, 47 grains	158·88	216·76	= 375·64	84·72
Average	156·24	205·29	= 361·53	86·90
2. Schultze Company's Gun, No. 3, made by W. W. Greener.				
Curtis & Harvey's No. 6, 3dr.	140·16	205·16	= 345·32	84·44
Hall and Son's No. 6, 3dr.	160·32	208·20	= 368·52	88·72
Pigou & Wilks' No. 4, 3dr.	138·00	215·32	= 353·32	85·00
Schultze, 42 grains	148·08	210·76	= 358·84	82·20
,, 42 grains	164·40	166·44	= 330·84	83·44
,, 42 grains	158·88	180·36	= 339·24	85·10
Average	151·64	197·71	= 349·35	84·82
3. Schultze Company's Gun, No. 2, made by W. W. Greener.				
Curtis & Harvey's No. 6, 3¼dr.	141·60	211·80	= 353·40	85·92
Hall & Son's No. 6, 3¼dr.	156·72	185·24	= 341·96	91·88
Pigou & Wilks' No. 4, 3¼dr.	144·96	203·52	= 348·48	87·46
Schultze, 47 grains	164·40	177·12	= 341·52	87·22
,, 47 grains	163·44	188·00	= 351·44	86·10
,, 42 grains	159·60	191·76	= 351·36	86·82
Average	155·12	192·91	= 348·03	87·57
4. Messrs. Hall's Gun, made by Maleham.				
Curtis & Harvey's No. 6, 3¼dr.	142·56	197·48	= 340·04	87·72
Hall & Son's No. 6, 3dr.	131·04	178·80	= 309·84	84·30
Pigou & Wilks' No. 4, 3dr.	135·12	214·28	= 349·40	82·70
Schultze, 49½ grains	153·60	169·48	= 323·08	86·70
,, 47 grains	148·56	194·32	= 342·88	86·52
,, 42 grains	169·20	167·40	= 336·60	87·36
Average	146·68	186·96	= 333·64	85·88
5. Messrs. Curtis & Harvey's Gun, made by Maleham.				
Curtis & Harvey's No. 6, 3¼dr.	135·36	204·44	= 339·80	87·32
Hall & Son's No. 6, 3¼dr.	120·72	173·28	= 294·00	84·96
Pigou & Wilks' No. 5, 3¼dr.	145·20	171·60	= 316·80	92·64
Schultze, 52 grains	150·24	195·24	= 345·48	88·32
,, 52 grains	147·84	168·16	= 316·00	88·00
,, 50 grains	162·72	202·84	= 365·56	88·10
Average	143·68	185·93	= 329·61	88·22
6. Schultze Company's Gun, No. 1, made by Maleham.				
Curtis & Harvey's No. 6, 3⅜dr.	132·24	160·84	= 293·08	88·54
Hall & Son's No. 6, 3¼dr.	116·88	169·28	= 286·16	86·06
Pigou and Wilks' No. 6, 3¼dr.	126·96	147·36	= 274·32	90·62
Schultze, 52 grains	156·96	179·72	= 336·68	84·98
,, 50 grains	163·20	199·16	= 362·96	87·38
,, 50 grains	167·04	185·00	= [illegible]	[illegible]
Average	143·88	173·56	= 317·44	87·71
Mean Average of Six Guns	149·54	190·39	= 339·93	86·85

CYLINDER GUNS.—SUMMARY OF AVERAGES.

Description of Powder used, and weight of charge	Penetration × by 6.	Pattern.	Figure of Merit.	Recoil.
1. Schultze Company's Gun, No. 4, made by Maleham.				
Curtis & Harvey's No. 5, 3¼dr.	143·52	... 128·60	= 272·12	88·54
Hall's Letter A, 3½dr.	141·36	... 128·16	= 269·52	89·76
Pigou's No. 5	138·96	... 126·32	= 265·28	88·44
Schultze, 42 grains	133·68	... 121·96	= 255·64	83·96
,, 42 grains	148·08	... 134·56	= 282·64	83·94
,, 42 grains	138·96	... 137·52	= 276·48	84·06
Average	140·76	... 129·52	= 270·28	86·45
2. Messrs. Hall's Gun, made by F. T. Baker.				
Curtis & Harvey's No. 4, 3¼dr.	139·44	... 126·88	= 266·32	88·42
Hall's Letter A, 3½dr.	137·76	... 139·40	= 277·16	86·84
Pigou's Alliance, No. 4, 3½dr.	126·96	... 131·60	= 258·56	83·52
Schultze, 42 grains	149·28	... 124·88	= 274·16	85·34
,, 42 grains	146·16	... 129·04	= 275·20	84·22
,, 42 grains	143·52	... 119·60	= 263·12	84·96
Average	140·52	... 128·57	= 269·09	85·55
3. Schultze Company's Gun, No. 6, made by F. T. Baker.				
Curtis & Harvey's No. 4, 3¼dr.	134·88	... 121·84	= 256·72	91·46
Hall's A Mixed, 3½dr.	150·00	... 125·08	= 275·08	93·00
Pigou's Alliance, No. 4, 3½dr.	142·56	... 123·44	= 266·00	92·76
Schultze, 47 grains	144·00	... 135·00	= 279·00	85·36
,, 47 grains	140·40	... 135·08	= 275·48	84·70
,, 47 grains	129·60	... 125·04	= 254·64	83·56
Average	140·24	... 127·58	= 267·82	88·47
4. Schultze Company's Gun, No. 5, made by by Powell and Son.				
Curtis & Harvey's No. 4. 3¼dr.	136·56	... 116·44	= 253·00	87·80
Hall's A Mixed, 3½dr.	140·16	... 116·16	= 256·32	91·32
Pigou's No. 4, 3½dr.	125·52	... 131·60	= 257·12	85·56
Schultze, 42 grains	141·36	... 130·28	= 271·64	84·18
,, 42 grains	133·20	... 132·16	= 265·36	83·40
,, 42 grains	129·84	... 132·40	= 262·24	83·42
Average	134·44	... 126·51	= 260·95	85·95
5. Messrs. Curtis & Harvey's Gun, made by F. T. Baker.				
Curtis & Harvey's No. 4, 3¼dr.	140·64	... 119·00	= 259·64	84·90
Hall's Letter A, 3½dr.	139·92	... 110·80	= 250·72	84·66
Pigou's Alliance No. 4, 3½dr.	132·00	... 127·52	= 259·52	81·74
Schultze, 47 grains	138·24	... 103·28	= 241·52	81·12
,, 47 grains	144·96	... 103·28	= 248·24	82·36
,, 42 grains	145·44	... 102·40	= 247·84	82·58
Average	140·20	... 111·05	= 251·25	82·89
6. Messrs. Pigou, Wilks, & Laurence's Gun, made by W. W. Greener.				
Curtis & Harvey's No. 4, 3dr.	131·52	... 99·92	= 231·44	84·38
Hall's Letter A, 3dr.	125·52	... 109·60	= 235·12	85·42
Pigou's Alliance No. 4, 3dr.	122·64	... 110·52	= 233·16	81·58
Schultze, 42 grains	139·44	... 104·84	= 244·28	83·34
,, 38 grains	124·56	... 124·88	= 249·44	76·92
,, 40 grains	137·28	... 115·56	= 252·84	81·90
Average	130·16	... 110·89	= 241·05	82·26
Mean Average of Six Guns	137·72	... 122·35	= 260·07	85·26

In examining the above table it will be seen that Mr. Greener's gun, which made the highest score among "the choke-bores" under the new figure of merit, still heads the list, both in individual scores and on the average, but its best performance is with the Schultze powder by 1·24. In the cylinders, Mr. F. T. Baker's gun is displaced by one of Mr. Maleham's

entered by the Schultze Company, which had the highest average as well as the highest individual score, in both cases due to the new powder. In comparing the two classes as shot in 1875 and 1878 respectively, and taking the average of the six highest scores in each there is a falling off in 1878 of 5·68 points. Thus in 1875 the difference was 85·87, whereas in 1878 it was only 80·19; but it must be remembered that in 1875 Mr. W. W. Greener's winning "choke bore" made the exceptionally high figures of 402·5—raising the average of the six very considerably.

The above table shews a falling off in average penetration in Mr. W. W. Greener's gun from 188 to 156, which as before remarked may probably be attributed to the difference in the paper, and possibly to the change in the weather, which was immensely hot and dry in 1875, being in favour of penetration generally and of the "choke bore" in particular. In pattern however, independently of the improved regularity, the average is raised from 214·5 to 220·8. In the cylinders, omitting entirely Mr. Turner's modified choke, and Mr. Davison's two guns, whose performances were in a somewhat similar category, there is also a diminution of penetration though not nearly so great; for we find Mr. Jeffries' and Mr. W. W. Greener's guns making respectively a penetration of 149·5 and 154·5 against 150, which was the highest penetration made by black powder (Hall's A mixed), or indeed by any powder in a cylinder gun, the next highest being 142·56 made by Pigou powder from the same gun.

The "Wear and Tear" Trial of 1875 dispelled the main objection to the new boring, since, after the conclusion of 2,544 shots, out of three guns respectively, no falling off had been detected in their shooting, and no wear of their muzzles can be ascertained by Steward's callipers (which will measure to the ten-thousandth part of an inch), and there has been no leading which could not be removed in a few minutes by water aided by tow and turpentine. The three guns tested in this way belonged to Mr. W. W. Greener of Birmingham, Mr. F. T. Baker of Fleet-street, London, and Mr. Malcham of Sheffield, all three varying more or less in their boring, but all of course on the "choke" principle.

It results, therefore, that the new plan will do what it professes, without fear of any bad consequences to the gun itself, and it only remains for sportsmen to make up their minds as to the extent to which they wish their guns improved in pattern, and give their orders accordingly, since it appears clear enough that in proportion to the extent of the "choke" will be the increase of pattern and strength of shooting.

There is one other question still to be settled, which I have not yet touched on, viz. that relating to the hardened shot chiefly used at the 1875 trial. The opponents of the choke-boring allege, first, that this hard shot is essential to the development of its power; and secondly, that it will not kill game like the soft shot, because it will not spread out or flatten against the bones and thereby increase the shock, instancing the express rifle as a case in point. As to the first of these allegations, though I do not fully assent to it, because I have seen soft shot perform well on several occasions, yet I have reason to believe that it will "lead" the barrels so seriously as to interfere with its use; but on the second proposition I join issue at once, and have not the slightest doubt that hard shot will kill game quite as surely as soft, and most probably even more so. No one who has seen the effect of hard shot on wood, tin, and iron can doubt its destructive powers; and that it flattens on such hard substances as bone, tin canisters, &c., is clear enough, as I have repeatedly proved; indeed, in this respect there is little difference from soft. Judging from these facts, I confidently predict that the hard shot (known as "chilled") will not only, *cæteris paribus*, be found to be as killing as the soft, but even more so, when generally tested in the field, as without doubt it will be.

Having thus carefully compared the performances of the "choke-bore" with the ordinary bore, let us now see in what the mechanical difference between them consists. Until the year 1874 gunmakers bored their barrels as perfect cylinders from breech to muzzle, beginning where the cone of the chamber ceases, and only altering this cylinder at each end where necessary by the process termed "regulating." Thus, if the penetration is bad, the plan was to "open" the breech, while

if the pattern is too wide, the muzzle is relieved till it comes right,— that is to say, it is rendered more or less conical, at each end or both, by a suitable "bit"; and by these means, carefully carried out by men of experience, good gunmakers are able to turn out guns which may be relied on to combine pattern with penetration up to the old regulation standard. Sometimes a pair of barrels will "come to their shooting" almost at the first trial, but at others the regulation is a long process, and occasionally they obstinately refuse to succumb and are discarded, though such a case is certainly rare.

The "choke-bore" at first took still more time, but after a few months' experience it has been found to give much less trouble; and though there will of course be considerable variations in the shooting of these guns, the amount of difference between the highest and the lowest performances of barrels bored by the same tools is very much less than of old. The principle adopted in all these guns is the same, that is to say, the diameter of the muzzle is smaller than that of the next two or three inches of the barrel to an extent varying from 15-thousandths to 30-thousandths of an inch. According to the American accounts, at first the muzzle was either reduced by screwing on an additional piece, or it was swedged in exactly in the same way as is practised with the brass cartridge case used for small-bore rifles; but in England the practice now is to forge the barrels so thick at the muzzles that they will bear cutting out to the desired depth. This enlargement of the calibre is either partial and confined to a distance from the muzzle varying from 2½ to 3 inches, or it extends to the whole length of the barrel except the muzzle end, which for about the above distance contracts in a similar way. By the permission of several of the chief competitors at the 1875 gun trial I have carefully measured their barrels, with, of course, the understanding that I should not divulge the trade secrets thus entrusted to me; but the above two distinct principles were previously known to me and to others in this country, and have long been practised in America under the names of the "long choke-bore" and the "tulip choke," which latter is an expressive term, though of course the tulip shape is an exaggeration of the slight cut practised. I am not, however, permitted to inform my readers which plan is adopted by each of the chief competitors in the recent trial, but I may mention that there were at least half a dozen modifications of them adopted, both in the depth and exact situation of the enlargements. The essential point is that the outside pellets shall be driven inwards upon the central mass by the "choke" at the muzzle, but whether this is done in one way or the other does not appear to matter a great deal, though of course the results of the recent trials point to Mr. W. W. Greener's plan, whatever it may be, as the absolute best—that is to say, it is capable of doing more than any other; but whether or no it does more than is required it is for sportsmen themselves to decide; and if they answer in the affirmative, there is a long list of makers only a short distance behind him from whom they may make their choice.

Sect. 4.—Selection of the Gun.

The Action to be selected from the various plans alluded to at pages 30-37 will a good deal depend on the kind of shooting for which it is intended, and also on the sportsman himself. If very heavy charges are to be used, nothing in my opinion stands them so well as the treble grip, combined with Mr. W. W. Greener's side bolt working in a projection from the top of the barrels which drops into the face of the false breech. As in all other snap-guns, however, the bite of this grip is not so great as in the "double grip" united with the long lever, but practically it stands every test to which it has been submitted. Next to this in strength comes the combined Purdey and Westley Richards, and I am by no means certain that the latter is at all inferior in this respect, while in point of neatness it is certainly its superior. The Westley Richards gun, depending entirely on the top snap, is not of course so strong as the two I have mentioned above, but if care is taken to keep the two wearing surfaces well oiled it answers admirably; and the one I had myself for several seasons was as sound at the end of them as when first made. If the shooter wishes for a gun capable of very rapid loading, as for *battue* purposes, one of the self-cocking guns

will probably be selected by him; and according to Colonel Goodlake, V.C., and other prominent performers at the *battue* the "gun of the future" is to be hammerless, and as he thinks, constructed in its action on Mr. W. W. Greener's principle with the addition of Anson and Deely's lock patented about two years ago. This lock is unusually strong in all its parts, and is so constructed that the striker forming a part of the tumbler fills the hole through which its nose passes to the cap, and thus prevents any escape of gas into the lock. I have examined a lock on this construction which has had a season's hard wear without being once oiled, and found no evidence whatever of such an escape, so that it may be assumed that with ordinary care the lock is free from this objection. It is "full cocked" in opening the gun for loading, but bolted, the word 'safety" being exposed; and it requires the bolt to be pushed forward to cover this word before it can be fired. Anson and Deely's lock is unquestionably a very excellent one, being of the most simple construction, and easily reached for oiling by removing a metal plate, which is only kept in place by an ordinary screw. To take it to pieces, however, a peculiarly made cramp must be obtained, which is always sent out with the gun, in case of accident to the spring, requiring a new one, but otherwise nothing more than a little oil is ever required. For these reasons the old-fashioned lock has no advantage over the Anson and Deely, and the choice between the two may safely be left to fancy or caprice. The lock is adopted by Mr. Purdey, Mr. W. W. Greener, the Westley Richards Company, Mr. Malcham, Messrs. Powell and Sons, Messrs. Holland and Holland, and most other gunmakers, while Mr. Murcott's is abandoned in its favour, and that of Mr. Gibbs of Bristol is its sole rival as suited to a hammerless gun. Many other makers use self-cocking actions, among whom we may enumerate Messrs. Woodward and Son of St. James Street, Mr. Lang of Cockspur-street, Mr. F. T. Baker of Fleet Street, and some others.

Weight of Guns and Length of Barrels.—It is needless to allude to the weight of muzzle-loaders, as they are now almost entirely disused. For breech-loaders the following are the weights generally adopted:—

20	bore,	5 lb. 7 oz.	to 6	lb.
16	„	6 lb. 0 oz.	„ 6¼	lb.
14	„	6 lb. 8 oz.	„ 6¾	lb.
12	„	6 lb. 14 oz.	„ 7¼	lb.
10	„	9 lb. 0 oz.	11	lb.
8	„	10 lb. 8 oz.	15	lb.

For the American market 12 bores are often made to weigh 9 lb., 10 lb., and even as high as 12 lb., but these weights are very seldom used in this country nowadays except for wild-fowl shooting. Some sportsmen, however, still employ guns of 9 lb. weight for game at the end of the season.

The Lengths of barrels used are as follows:—

20	bore,	28 to 30	inches.	
16	„	„ „	„	„
14	„	„ „	„	„
12	„	26 „	32	„
10	„	30 „	32	„
8	„	32 „	36	„
4	„	34 „	36	„

Choice of Gauge.—By general consent it is now admitted that if the sportsman can carry a 7 lb. gun without fatigue he will find the 12 gauge best suited to his purposes, that is to say, for all but wild-fowl shooting and possibly driving. With the aid of the new choke-boring an 8 gauge may now be made to do far more than a 12, both in pattern and penetration; and if there is no objection to the enormous recoil incidental to the heavy charge necessary to develop its powers, an 8 gauge will suit the sportsman in ambush, whether driving grouse or partridges, or wild-fowl shooting, better than a 12. It must, however, always be remembered that the choice of gauge is entirely dependent upon the physical powers of the shooter, and though a weak man will go through a day better with a 20 bore than with a 12 bore, because he can use the former steadily, while the latter tries him so much as to interfere with his aim, yet at the target, or in the hands of a strong man, the larger bore will do the most execution. This important point seems to be generally forgotten in discussing the subject, which is very remarkable, as it seems so obvious as to thrust it into the notice even of the most careless observer. In order to compare the

performances of 20 and 8 bores with the 12 bore, I append the scores of the winning guns in the two classes for these gauges :—

Maker and Description of Gun, with kind of Shot and Powder.	Pattern.	Penetration multiplied by 6.	Figure of Merit.	Final Figure of Merit.
	L.B. R.B.	L.B. R.B.		
GREENER, W. W.—8-gauge ; 15 lb. ; 36 in. laminated steel ; 2½ oz. chilled shot ; 6 dr. C. & H. No. 6 powder. 40 yards.	353 320	168 180		
	365 370	150 210		
	425 430	186 216		
	378 255	198 174		
	392 234	198 174		
	433 352	210 156		
Averages	358·9	185	543·9	
Ditto, 60 yards.	77 124	66 54		
	128 128	72 72		
	111 116	72 66		367·3
	183 139	102 78		
	56 91	66 66		
	136 113	102 72		
Averages	116·8	74	190·8	
GREENER, W. W.—20-gauge ; 5 lb. 8 oz. ; 29 in. laminated steel ; 1 oz. chilled shot ; 2¾ dr. Pigou No. 4 powder. 40 yards.	163 130	108 168		
	162 131	96 168		
	102 164	114 120		
	186 142	150 168		
	157 135	120 186		
	130 142	138 156		
Averages	145·3	141	286·3	
Ditto, 60 yards.	28 58	12 60		
	71 55	60 60		
	31 50	24 84		195·2
	38 63	48 84		
	57 29	72 —		
	64 58	72 72		
Averages	50·1	54	104·1	

From these scores it will be seen that at 60 yards the 8 bore gave an average pattern of 116, or nearly as good as the old-fashioned boring will give at 40 yards. Its full powers were not however developed with No. 6 shot, as it requires at least No. 5, and better still No. 4, to combine its best pattern and penetration. On the other hand, with the new boring a 20 gauge weighing only 5½ lb. will do even better than the old gun at 40 yards, but owing to its small charge of powder it fails altogether at a longer range. Sportsmen must bear this in mind in selecting their barrels, and if they regard penetration of vital importance they must consider well before they select a 20 bore instead of a 12. There are, however, many cases, and especially among the rising generation, in which the arms are not strong enough to carry 7 lb. all day without loss of accuracy in taking aim, and in such instances the expediency of selecting a light gun is fully borne out.

RANGE OF GUNS.—Under the old system of boring 40 yards was considered to be the range beyond which no gun could be relied on to kill with anything like certainty, in consequence of the large gaps left in the pattern made by it at any greater range. In the 1878 trial at 40 yards every pad was furnished with a 4-in. paper square fixed in its middle, on which the number of pellet marks was registered and entered in our books. It would be useless to print these to the extent of the whole series of 1800 shots, but I give the numbers made by the five highest in each class at 40 yards, and also the number of pellet marks made by these guns afterwards tested by us at 50 and 60 yards. Thus, commencing with Mr. Greener's gun, which, with a figure of merit 88·36, gave the high average pattern 220·08 with C. and H. powder, the pellet marks on the 4-inch square are as follows, viz : With the left barrel—6, 12, 12, 10, 14, 9, 10, 10, 9, 11, 6, 7, 9 ; right ditto—10, 12, 7, 7, 10, 11, 8, 12, 10, 6, 10, 16. With P. and W. powder, the "figure" being 63·34, and the pattern 210·84, the left barrel pellet marks were—9, 9, 10, 12,

13, 9, 9, 11, 7, 8, 10, 13, 16; right ditto—9, 21, 8, 10, 7, 7, 11, 7, 5, 7, 12, 7. With H. powder this gun, with a figure 66·44, gave an average pattern 188·04, and the pellet marks were: Left barrel—8, 8, 11, 9, 7, 14, 5, 9, 4, 8, 9, 8, 13; right ditto—5, 4, 5, 8, 4, 14, 11, 6, 8, 7, 3, 8. Next we have Mr. Greener's second Schultze gun, which made the high figure of 65·40 with the H powder, with an average pattern of 208·20. Here the 4-inch patterns were: Left—14, 7, 6, 8, 9, 8, 16, 12, 7, 8, 8, 14, 4; right ditto—10, 4, 9, 8, 5, 11, 8, 8, 6, 8, 8, 5. Lastly we take Mr. Malehan's Hall gun, which, with P. and W. powder, made the figure of merit of 62·14, and an average pattern of 214·28. Here the 4-in. patterns were respectively: Left barrel—13, 6, 8, 7, 6, 13, 9, 7, 7, 8, 13, 7, 6; right ditto—4, 6, 11, 7, 16, 7, 5, 12, 4, 9, 10, 8. Probably many people may consider these pellet marks too numerous, and such is certainly our opinion for average shooting at ordinary distances; but when we come to examine in the same way the pellet marks made within a 4-in. square by the cylinder, we shall perhaps come to the conclusion that the other extreme is reached, since in many cases the squares were only struck by one pellet, and in some by none. Thus Mr. Baker's excellent Hall gun, which with its proper powder gave the capital figure of merit 70·52 and the high average pattern (for a cylinder) of 139·40, produced the following series of 4-in. scores, viz.: Left barrel—5, 11, 6, 3, 4, 5, 5, 5, 5, 3, 7, 1, 8; right ditto—6, 6, 2, 3, 5, 4, 5, 1, 6, 5, 2, 4. Its next performance with the Schultze powder (42 grains) was the absolute highest with that kind of explosive, giving a pattern 124·88, and a "difference" of only 43·88. Here we have the 4-inch pads struck as follows, viz.: Left barrel—4, 1, 2, 4, 8, 1, 5, 6, 6, 3, 9, 4; right ditto—2, 3, 3, 2, 4, 4, 1, 2, 4, 2, 9, 5. Another good performance of this gun with the same charge of the Schultze powder made a figure of 54·90, and an average pattern 192·40; this produced the following series of of 4-inch patterns, viz.: Left barrel—2, 2, 5, 7, 8, 6, 6, 5, 2, 3, 4, 7; right ditto—1, 10, 2, 0. 1, 2, 1, 3, 5, 3, 6, 5. Fourth on the list comes again Mr. Baker, with a gun supplied at a day's notice to the Schultze company, making a "figure" 54·42, and an average pattern 125·08. With this gun the 4-inch patterns were respectively: Left barrel—3, 2, 0, 0, 4, 3, 1, 2, 7, 2, 2, 5, 2; right ditto—2, 4, 3, 2, 6, 11, 5, 5, 4, 3, 4, 1. Lastly we come to Messrs. Powells' Schultze gun, shot with C. and H. powder, producing a "figure" 54·32, and an average pattern of 116·44. In this instance the 4-inch series was the following: Left barrel—3, 6, 5, 4, 0, 5, 3, 7, 2, 9, 0, 6, 6; right ditto—3, 0, 1, 8, 2, 4, 4, 4, 3, 0, 2, 5.

At 50 yards Mr. Greener's winning choke with 3¼ drs. Pigou and Wilks' powder and 1⅛ oz. of No. 6 shot, gave on the 4-inch square, with the left barrel—8, 4, 5, 6, 4, 6, 5, 4, 5, 3, 5, 5, 5 pellet marks. The right barrel made 4, 4, 5, 6, 5, 6, 5, 7, 5, 5, 7, 6. The same gun, with a similar charge of C. and H. powder and shot, marked the 4-inch square as follows—viz.: 6, 3, 3, 4, 4, 5, 5, 6, 4, 3, 3, 4, 3; right ditto—5, 4, 3, 5, 6, 3, 4, 5, 2, 2, 6, 5. On the next trial, with 45 grains of the Schultze powder a similar shot, the 4-inch patterns were, Left barrel—6, 3, 4, 4, 6, 5, 5, 2, 5, 4, 5, 3, 3, 4; right ditto—5, 4, 4, 2, 6, 4, 3, 2, 4, 3, 2, 4. Repeating this with 45 grains and 1⅛ oz. No. 5 shot, the numbers were: Left barrel—2, 3, 5, 7, 3, 4, 6, 4, 3, 4, 3, 8, 3; right ditto—5, 4, 6, 4, 5, 1, 5, 6, 6, 3, 3, 5. I then tried the same gun with 3¼ drs. P. and W. powder and 1⅛ oz. No. 5 shot, giving the annexed series of 4-inch patterns, viz.: Left barrel—3, 4, 5, 2, 5, 2, 3, 4, 3, 3, 5, 4; right ditto—3, 4, 2, 4, 4, 4, 4, 3, 5, 4, 2, 5. Mr. Baker's modified choke produced the following series of 4-inch patterns, the charge being 3¼ drs. of C. and H. and 1⅛ oz. No. 6 shot: Left barrel—3, 3, 3, 3, 4, 4, 4, 4, 4, 5, 3, 4, 2; right ditto—4, 3, 6, 3, 2, 4, 4, 3, 3, 4, 3, 5. His cylinder gun, with its proper powder (Hall's Letter A), 3½ drs., and 1⅛ oz. No. 6, gave: Left—2, 2, 2, 2, 2, 2, 1, 2, 2, 2, 3, 2, 3; right—4, 2, 3, 3, 2, 3, 2, 3, 3, 1, 2, 2. Shot with 45 grains of Schultze powder, the results were: Left—1, 3, 2, 2, 5, 3, 3, 2, 3, 4, 2, 4, 3; right ditto—4, 3, 5, 3, 2, 4, 4, 3, 3, 4, 3, 5. Messrs. Powells' cylinder, shot at 50 yards with 3¼ drs. of P. and W. powder, and 1⅛ oz. No. 6 shot, gave: Left barrel—2, 3, 1, 1, 2, 2, 2, 1, 2, 2, 2, 2, 2; right ditto—1, 2, 2, 3, 2, 1, 0, 2, 3, 1, 2, 2.

By a careful examination of hundreds of pattern sheets I am satisfied that at 40 yards no gun can always be relied on to kill a grouse placed in a 30-inch circle, however straight it may be held, and consequently I do not believe the modern system is at all too close for that distance, and is well suited for all but rabbits and woodcocks. Here the range is not only within 40 yards, but the aim is necessarily so quick that a wider scattering of the shot is required, and for this purpose the cartridge-case must be differently loaded, as I have already mentioned.

Sect. 5.—Trial of the Gun.

The maker, having received his orders, will produce one or more guns for trial, and the following is the mode in which it should be effected. Every gun, if made to order, should be carefully examined before it is engraved, as in that state the slightest flaw may be detected; but nowadays gun-makers have generally no difficulty in fitting their customers with ready-made guns, and then the whole dependence must be placed on the character of the maker, as far as safety is concerned. It is very easy for the experienced eye to detect, in a moment, whether or not a gun has been highly finished; but few persons have had the experience which will be serviceable to them here. Inferior guns are now filed smooth enough, and even in the worst no eye can detect the bumps and lumps which Colonel Hawker speaks of as distinguishing the bad from the good barrel. It is not in this point that the inferior gun is deficient, but it is in the quality of the metal, and its forging, that the chief difference lies, as well as in the superior filing of the best actions, and the delicacy and accuracy of the locks and other fittings, which are very important to safety, and also to correct shooting. To try the gun, it is only necessary to fire it at some mark which will show the result, such as a quire of thick brown paper, or any similar material, or at an iron-plate, covered with whitewash after each shot—which shows the strength of the shooting to a practised eye, as well as its closeness and regularity. At forty yards, an ordinary fowling-piece ought theoretically to deliver its shot regularly over a 30-inch circle, leaving no space of the size of a partridge without a shot in it. If a choice is to be made between certain guns, and that choice depends upon their relative driving powers, it is very easy to test them by trying the number of sheets of paper into which each will drive a given quantity of shot; but due regard should always be had to the regularity of the delivery in a certain number of discharges. Some guns vary greatly in that point, sometimes scattering their shot much more than at others. The report of the *Field* trials given at pages 38 to 46*a*, will show what has been done in public both by the ordinary boring and by the choke-boring, and the sportsman has only to give his orders accordingly.

It is quite true that a good target-gun is not always equally successful at game, because it is necessary to fit the gun to the shooter in weight, length of stock, "casting-off," and bend of stock, as well as in balance. The young sportsman is too apt to omit all these considerations, and to conclude that because a pair of barrels shoot well at the target or in the hands of his friend, they will succeed as well in his own. This is one cause of the reputation earned by the London makers, as well as by some country firms, who take great pains to fit their customers, whereas the Birmingham makers are often too much engaged in wholesale trade to descend to the minuteness required in a single transaction. The experienced sportsman either gets his gunmaker to measure him and fit him afterwards, or he orders his new gun to be exactly similar in the above points to one which he has ascertained to suit him. These remarks should be carefully studied and followed by every tyro.

Sect. 6.—Cleaning the Gun.

The Cleaning of Muzzle-loading Guns should be conducted as follows:—Get a bucket half full of cold water, place the barrels upright in the water, and insert the cleaning-rod armed with a piece of sponge, or cloth, or tow, and work this well up and down. Then transfer the barrels to a

jug or other vessel of clean hot water, and remove by the scratch-brush any lead attached to the barrels. Next take them out of the water, and wipe all clean inside and out; then pass an oiled *rag* (not tow) down the inside, and rub over the outside with the same. All the iron-work should be slightly rubbed over with fine neat's-foot oil.

Breechloaders do not require any washing, inasmuch as, having no powder-chamber to cake up, water is not needed to dissolve the residuum. If they are left for twelve hours the slight residuum in the barrels becomes moist by attraction of water from the atmosphere; and by using a damp sponge or piece of tow, the whole internal surface may be cleaned out, finishing with a clean, oiled mop of wool. This leaves the inner surface as bright as when new, which state ought to be maintained for an indefinite time. If either gun has its barrels leaded (which never ought to occur in the breech-loader), the scratch-brush must be used till the lead is removed; or by shaking some quicksilver up and down in the barrels, an amalgam will be formed with the lead, and it may in that state be readily removed without the use of the scratch-brush, which by many people is objected to. The great point is to keep the muzzles clean and free from rust, for it is upon this part of the barrels that good shooting mainly depends. They should be carefully oiled after putting the cleaning rod through; and if this is done, and the chambers with their shoulders are kept clean and oiled, the cylinders of the barrels will take care of themselves, now that greased wadding is invariably used.

Sect. 7.—Accessories to the Gun.

Gun-cases and their Contents.—All the *additamenta* should be contained in every gun-case, which is made either of wood or leather—the latter being, I think, the most convenient on account of its greater portability. The appurtenances to the muzzle gun are comprehended under three heads—1st, the shooting materials, including powder-flask, shot-belt or pouch, cap-holder, and wadding-punch, with wadding; 2nd, the cleaning materials, including cleaning-rod, complete with its several heads, tow, cloth, linen, oil, &c., nipple-wrench, and turn-screw; 3rd, spare articles, a spare rod, nippers, a mackintosh cover, spare powder, shot, and caps, with patent wadding when used; also, Eley's cartridges.

The Copper Cap is now universally employed for general purposes; but for punt-guns, where much wet is often experienced, a different mode of ignition is employed, which will be described under the head of Wild-fowl Shooting. In purchasing caps, be careful that they are of the kind called anti-corrosive. Eley's waterproof caps are made with a layer of India-rubber, and answer the purpose well; indeed, I believe they may supersede the necessity for the side-primer in punt-guns.

The Powder-Flask and Shot-Pouch are too simple and too well known to need description. Sykes's improved flask with the double spring closing sides, is the most convenient and safe.

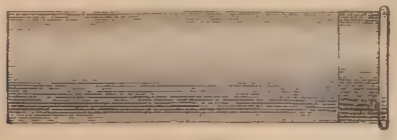
The Appurtenances to the Breech-loader are a supply of cartridge-cases, either empty or loaded. If the former, a loading machine must be added, of which there is great choice, more than a dozen different plans being in the market, as I shall presently show. Beyond these and the powder, shot, wads, &c., required for loading (if the sportsman performs this important task), there is only needed the apparatus for cleaning, which is the same as for the muzzle-loader—viz., a cleaning-rod with proper heads, an oil-bottle containing a supply of neat's-foot oil, tow, and a mackintosh cover for the gun.

Cartridge Cases.—The cases or shells for the Lefaucheux gun, commonly known as the pin cartridges, have already been described at page 30. Mr. Lancaster's is similar, in being composed of brown paper with a brass capsule at its base; but here, instead of a chamber for a cap and a pin passing through to explode it, there is a perforated plate charged with detonating powder, which receives the blow of the pin from behind, with the copper or brass capsule intervening. The latter is not perforated, so that there is not the slightest escape of gas. In Schneider's central-fire case introduced by Daw, the centre of the capsule is perforated and riveted to a small chamber in which is placed from behind a cap containing a little brass

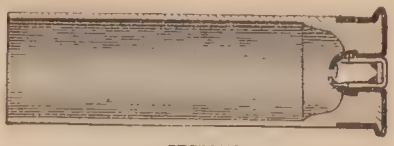
anvil. When the cap receives the blow, it explodes in the usual way, and as it exactly fits the chamber, there is no sensible escape of gas.

For a long time cartridge-cases were only made in France, but as soon as the breech-loading gun was generally introduced in England, the Messrs. Eley, of London, took up the manufacture, and soon produced an article equal, if not superior, to the French. Their example was followed by Ludlow, of Birmingham, and others, but the first-named firm still have the command of the English market. The important points to look to in these cartridge-cases, are, 1st, strength, so that they shall not burst, and thus will admit of a second, and even a third loading; 2nd, uniformity of size, without which all cannot fit the chamber, but will be either too tight or too loose. To insure this, every sportsman should have a brass or box-wood gauge, exactly the same size as the chamber of his gun, and he can then examine for himself, or by his gun-maker if he prefers it, every case before loading. The case should fit the chamber easily, and consequently the gauge as well. The central-fire case of the annexed form is, however, now almost always adopted, and is made by the Messrs. Eley of three qualities, green (best), blue, and brown. The green may generally be reloaded two or three times, and the blue often once, a small tool being sold for removing the caps. The price of these cases, both pin and central-fire, varies from 30*s.* to 50*s.* a thousand empty, or about one half-penny each on the average.

In reloading the pin-cartridge, there is some trouble in introducing a fresh cap, unless the point of the pin is



SIDE VIEW.



SECTION.

reduced in size, when a cap no larger than the diameter of the pin is placed upon the point and pushed into the hole in the case till it bottoms, after which the case may be loaded. Of course, this reloading will only be attempted where expense is an object, as the saving is little more than a half-penny per shot at the outside, and the additional trouble will be objected to by many. In some of the cheap cases, the caps are charged with inferior detonating powder, and the consequence is, that a misfire occasionally occurs. Such an event should not happen in more than one per thousand, which is far less than the average of misfires in the muzzle-loader.

A little instrument for removing pin-cartridge cases which have stuck, and called the cartridge-extractor, is sold, but it is very seldom required. Still it should be kept in the pocket for fear of accidents. In the central-fire cartridge no assistance is ever required, as there is always an extractor provided. Should the head of the case separate from the body, the latter is easily removed by inserting a finger, as it is quite loose.

The central-fire cartridge, as stated, differs from the pin cartridge case in having a cap introduced from the outside, through the middle of the capsule into a little brass chamber made just to fit it; and in order to effect the detonation of the powder within the cap, an anvil is introduced, the base of which rests on the bottom of this chamber. Mr. Daw makes the anvil fluted, but Messrs. Eley find that the original Pottet cartridge, with a little modification, answers quite as well. This consists simply in two pieces of stamped brass forming a strong septum in the cap, and acting equally with Daw's as an anvil for the blow. Under the ordinary pressure of gas with 3 drs. of powder no escape occurs, but with very large charges, as in the rifle, the cap breaks and sometimes gas passes to the striker. Hence it is not a good plan to connect this last-named part directly with the tumbler, as the gas then passes into the interior of the lock. These cartridges are loaded exactly like the pin cartridge, but they may be recapped with far greater facility.

Sect. 8.—Filling Cartridge Cases.

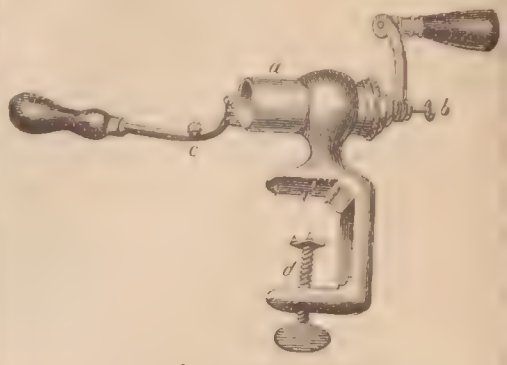
Cases may be filled by the hand readily enough, aided merely by a wooden

plunger for pushing the wads home. In doing this no blow should be given, but merely a push hard enough to ensure the wad being properly seated. In order, however, to prevent the shot wad from being displaced the edge of the case must be turned over; and to effect this, a machine is absolutely necessary, of which the following are the chief varieties.

THE CARTRIDGE-FILLING MACHINE invented by Jeffries, of Norwich, had for some time the complete run of the trade, but during the last few years several rivals have appeared, and one or two of them seem likely to supersede it. The object of all these machines is to ram down the wad sufficiently, and then to turn over the edge of the paper case so that there shall be no danger of the shot shifting forward in the barrel on the discharge of its neighbour, thus leaving an intervening space, by which it would be liable to burst the gun. In doing the "turn over," some machines are apt to crush the cases—a defect that not only tends to make them weaker, but also prevents easy loading and unloading, without which the breech-loader loses its principal advantage. Hence the machine which combines portability and cheapness with perfect and rapid execution of its work will be preferred. Of those for ordinary purposes which I have tried, I should select the machines of Jeffries (Norwich), Dartram (Birmingham), Baker (London), and Hawksley (Sheffield); the last two being merely machines for turning over. The best machines for filling large numbers are those of Erskine and Northcote, to be hereafter described.

CARTRIDGE CASE TURNED OVER.

Commencing with the most simple of these machines, Hawksley's —we find it consisting of a cylinder (*a*), to which is hinged a lever, having a knob (*c*) which, by means of the left hand, is pressed into its open mouth. At the opposite end of this cylinder is a rotating cup, so cut on its inner face as to turn down the cartridge-case when pressed against it by the knob (*c*), already mentioned. The plunger (*b*) pushes out the case when turned down, and the screw (*d*) attaches the machine to the table. This is a very simple and efficient machine, doing its work extremely well, and sold at 15s.



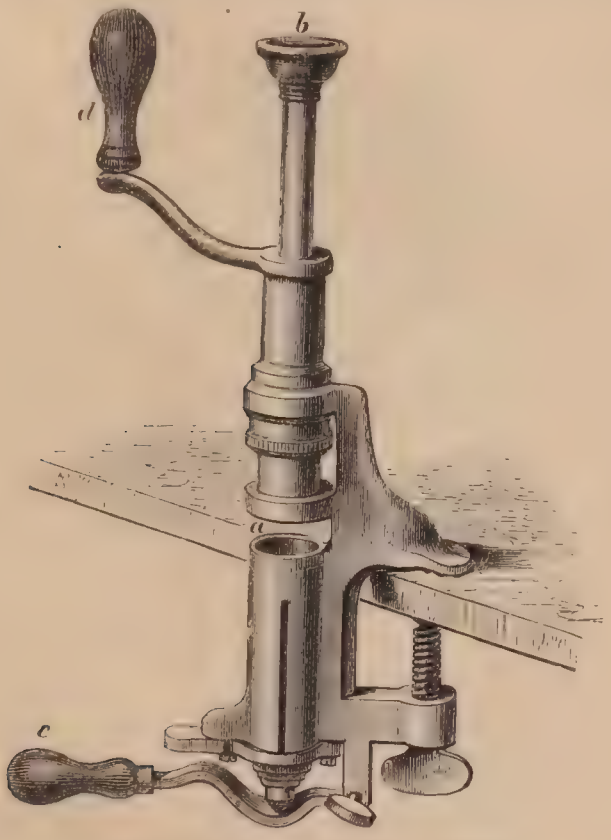
HAWKSLEY'S MACHINE, SHEFFIELD.

Next in simplicity comes Mr. Jeffries machine, which differs from Hawksley's chiefly in the fact that the pressure is made by the screw worked by an ordinary handle, and driving the cup against the open end of the cartridge, whereas in the Sheffield machine the power is applied at the base. The plunger is exactly the same as in the last-described machine; but there is the addition of the lever in this, to turn up and thus form a base for the cartridge-case, requiring also to be turned down again in order to liberate it after the work is done. This is also a very simple and useful machine, and the price being the same as that of Hawksley's there is nothing to choose between them in this respect. The power being applied by a screw instead of directly from the hand, renders it more suited to those who are not capable of sustained exertion; but we fancy that there are few strong enough to carry a gun who would find fault with the Sheffield machine as regards this. It has in addition a spring rammer, under which the case is placed to receive a light blow which shall insure the proper seating of the wads. This is also added to some of the Sheffield machines, and should be adopted.

Messrs. Bussey and Co. have attempted to combine all these advantages in one machine, and their plan is certainly attended with the advantage of rapid loading and turning over. It differs from the ordinary plans in the following particulars:—Instead of the fixed cylinder, in which the cartridge is placed, to be submitted to the action of the turner-over, it has six chambers,

which are together capable of being removed for the purpose of loading—by which such increased rapidity is obtained, that from 180 to 200 cases may be filled and turned over per hour; but very neat work cannot be effected. The process is as follows:—Detaching the chambers by turning the handle, the cases are inserted, and the hinged bottom being restored to its position, they are placed perpendicularly upon the table, and the powder, wads, and shot inserted in their turn. Each is then held under the rod to be rammed home, after which, taking them horizontally in the left hand, they are submitted in turn to the screw, and drop out of the chamber by turning the hinged bottom. The idea is ingenious, as, no doubt, there is some little difficulty in loading the cases without any support, and certainly by Mr. Bussey's machine this part is rendered more easy, and the whole operation more expeditious; but practice is necessary in order to manage the machine at all, and even then the cases are not turned over nearly as well as by Hawksley's machine, or Dartram's machine which is next to be described.

A machine combining all these requisites in a simple and cheap form is presented in Dartram's patent, an illustration of which is here given. In this machine the case is first placed

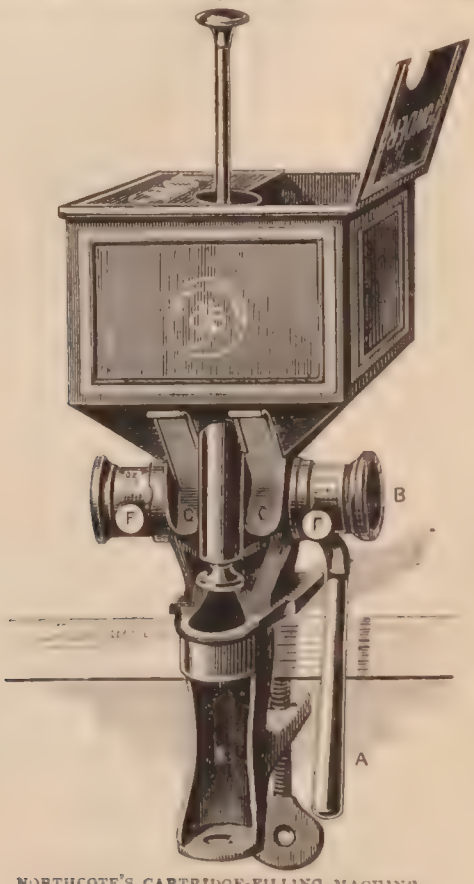


DARTRAM'S CARTRIDGE-FILLING MACHINE.

in the proper position, and the powder introduced through a tube with a bell-mouth at the top. The felt wad is then inserted through the slit (*a*), and driven home by the plunger (*b*), after which the shot is dropped through the same bell-mouth, and its wad inserted as before, when a final touch of the plunger seats it. Then holding up the lever (*c*) firmly with the left hand, the right rotates the handle (*d*), which effectively turns over the case. By turning out the slide in the usual way the plunger at once drops the loaded cartridge into the left hand. The section on page 49 shows it when properly finished. This machine is better adapted than Bussey's to turn over the central-fire cases; and it very materially facilitates the operation of loading to those whose

fingers are not quite clever enough to effect the introduction of the wads without some assistance. Practised hands will, no doubt, fill a hundred cases in less time by arranging them all on a table and filling them in succession, first with powder, next with the felt wads, then with the shot, and lastly with the thin wads; but to other people the filling-tube will be an advantage both in facility and expedition.

FOR THE MORE RAPID LOADING of cases, as when thousands are wanted, either one or the other of the two following machines may be selected, Mr. Northcote's having the advantage of portability and cheapness. In Mr. Erskine's machine 50 or 100 cases are arranged in a box, having above them a thin metal septum, and also a wooden slide perforated to correspond with the cases, and of such a thickness that each perforation shall hold the proper charge of powder or shot. After filling all these perforations and striking off the superfluous powder to one level, the



NORTHCOTE'S CARTRIDGE-FILLING MACHINE.

septum is withdrawn and the powder falls into the cases: wads are then introduced, and a similar operation is performed with the shot, followed by its proper wad; but the final turning over is not so simple, and, indeed, this is the weak part of the machine—I have never yet seen it perform this work properly. Mr. Northcote's, on the other hand, does not turn over. It has two magazines of powder and shot in metal boxes which hold enough for 50 or 35 charges. The powder and shot are placed in their respective chambers, when the cartridge is put into its receptacle (E.) The lever (A) is then turned up from F to B, which lets down the powder. A wad is next rammed down by the hand at D, and the process is repeated for the shot, after which the cartridge is removed for the "turn over" machine.

Baker's (Fleet-street, London) machine is an improvement on Hawksley's, which it resembles in appearance. It differs in having an internal cylinder, to which the handle is attached, and which is connected to the outer by a

cam. Consequently the power of the hand applied to the lever is greatly increased, and may be so readily graduated, that a case is very rarely crushed. It was used without a single breakdown at the late Wimbledon gun-trial, and universally approved.

Sect. 9.—Ammunition.

Gunpowder should always be perfectly dry, and is generally in that condition when uncorked from the canister; if, however, it is allowed to get damp in the flask, or after the canister is open, care must be taken to dry it by getting some plates which have been heated in an oven or before the fire, and pouring the powder backwards and forwards from one to the other; as soon as the two plates are cooled, fresh ones must be supplied; but the object is generally soon attained with a moderate quantity of powder. A safer plan, recommended to me by the late Mr. Lang, is to place the flask, full of powder, in a basin of boiling water, which will raise the strength, as proved by the *épreuvette*, a couple of degrees. The drying should be effected at a distance from any fire. Messrs. Pigou, Wilks, and Laurence, Messrs. Hall, the Kames Company, and Messrs. Curtis and Harvey, are the chief manufacturers of powder for sporting purposes, the last named having the command of the market. Powder, generally called No. 2, which is not over fine, is the cleanest and the best for muzzle-loaders, being fine enough to enter the nipple, without being so fine as to foul the gun. The next coarser grain, No. 3, cannot enter the tube of the nipple, so as to insure certain firing, but for breech-loaders it is the finest kind which should be used; and for great penetration, No. 5 or No. 6 will answer still better. For heavy charges, such as are used in punt-guns, coarse powder is still more desirable. Gunpowder is invariably composed of nitre, sulphur, and charcoal; but the proportions and mode of manufacture vary in some degree. The nitre should be very pure, and especially free from common salt, which, by attracting moisture from the atmosphere, prevents the proper ignition of the powder. The sulphur ought also to be purified, and the charcoal should be carefully prepared from alder, dogwood, or willow. These woods are charred in iron cylinders, and the charcoal is afterwards ground, and, like the first two ingredients, it is passed through a proper sieve. The three are then mixed, and spread upon the grinding-stones, which are calcareous, to prevent the risk of ignition by flint; the composition is moistened so as to make it into a cake; and, after some time, it is sent to the corning-house, where it is first pressed into a hard mass, and then broken up into lumps, which are again reduced into various sized grains, by rotation, on a disk of hard wood, in a sieve of parchment, perforated with holes varying according to the size of grain desired. The corned powder is then hardened, and polished by being made to revolve rapidly in a cylinder; after this the operation is completed by drying, which is effected by steam.

Several Substitutes for gunpowder have of late years been introduced, commencing with guncotton, which has been tried and found wanting, owing to the excessive rapidity of its combustion, and the difficulty of controlling it in a way to secure uniformity of shooting. Schultze's wood-powder has been more successful, and Reeves's felt has also obtained good results. Both the cotton and the felt have the objection that the charges cannot be readily measured, and must therefore be weighed; the wood powder, on the other hand, can be measured quite as readily as the old black powder, taking care to use no pressure, as it is readily reduced in bulk thereby. The advantage of all these compounds is, that they cause no smoke, which, in covert-shooting especially, is a very great one, and also in all cases for the first barrel.

As before remarked at page 42 other advantages have been claimed for the Schultze wood powder, and to settle its merits in comparison with those of the black powder, a trial was instituted and carried out at Wimbledon, to which, as far as regards the performance of the guns used, we have already alluded. With regard to the competing powders the following interesting summaries will afford a reliable clue to their merits, computed on the "figure of merit" of 1878, which was specially constructed to test the several disputed qualities of the Schultze powder in comparison with black.

TABLE OF RESULTS IN ARITHMETICAL ORDER.

		Average Figure of Merit.
Cylinder Guns.	1. John Hall and Son	41·67
	2. Pigou, Wilks, and Laurence	41·59
	3. Schultze Wood Powder ...	30·05
	4. Curtis and Harvey	28·81
Choke-bore Guns.	1. Curtis and Harvey	29·44
	2. Pigou, Wilks, and Laurence	28·10
	3. John Hall and Son	20·73
	4. Schultze Wood Powder ...	19·73
Average in both classes.	1. Pigou, Wilks, and Laurence	34·84
	2. John Hall and Son	31·20
	3. Curtis and Harvey	29·12
	4. Schultze Wood Powder ...	25·39

When, however, the comparison is made on the old principles, disregarding regularity of pattern, and taking in only the average pattern and penetration, a very different result occurs, for the Schultze powder comes out first in both classes, as will be seen by examining the following scores.

MEAN AVERAGE FIGURE OF CHOKE-BORES IN 1878, CALCULATED ACCORDING TO THE CONDITIONS OF 1875 TRIAL.

	Penetration.	Pattern.	Figure of Merit.
Schultze Powder Guns	159·08	188·25	347·33
Black Powder Guns	140·00	192·53	332·53
Superiority of Schultze powder over black			14·80

MEAN AVERAGE FIGURE OF CYLINDERS IN 1878, CALCULATED ACCORDING TO THE CONDITIONS OF 1875 TRIAL.

	Penetration.	Pattern.	Figure of Merit.
Schultze Powder Guns	139·33	122·88	262·21
Black Powder Guns	135·97	121·83	257·80
Superiority of Schultze powder over black			4·41

It is thus manifest that in spite of the "figure of merit" being specially constructed to test its weak points, though at the same time it was also framed so as to take in its increase in penetration, the new powder came out on the whole exceedingly well, while disregarding the variation in pattern, and estimating it under the old figure, it beat all its competitors by 14·80 and 4·41 points respectively in the two classes of guns.

In the late May trial (1878) its weak point was undoubtedly the want of uniformity in penetration, and for a long time I was unable to account for this or to suggest a remedy. At first I was inclined to believe that the defect depends on variation in the compression exercised on the powder, which has always been said to be necessary, and I constructed a screw rammer, intended to regulate it with great exactness. By accident, however, I have ascertained that compression only acts beneficially when it makes the wad fit the case, and that by the use of tight wads compression may be entirely done away with advantageously. By taking care to use tight black wads over the powder, a felt wad of ⅜-inch thickness, and a greased wad over the shot, with a properly turned down case I have obtained as regular a pattern even with 55 grains of Schultze powder as can be desired. By carefully loading his cases in this way, and using no more pressure than is required for black powder, the sportsman may now depend on the Schultze powder giving him as regular a pattern as he can desire, combined with greater penetration than that of black powder, little or no smoke or fouling, and a diminished recoil. I have now (July, 1878) fired more than 3,500 charges of the powder intended for next season, and have seen no indication whatever of danger, so that I think it may be relied on as safe in the ordinary acceptation of that word, and the Schultze Powder Company may be congratulated on their success. By carrying out the improvement in loading which is suggested above, the sportsmen of Great Britain will no doubt be advantaged by it very considerably. In one point, which has hitherto been overlooked, and which is of great importance in *battue* shooting and driving, it is very superior to black powder, viz., in its diminished development of heat, owing to its not fouling the barrels.

SHOT.—The following are the various kinds and sizes of shot, according to the London list issued by Messrs.

Walker and Parker who for many years have had the trade almost entirely in their hands. Of late years, however, Messrs. Lane and Nesham, of the Old Shot Tower, Commercial-road, Lambeth, have gradually absorbed a large part of the south-country trade, and have succeeded in making their sieves, &c., so as to produce a much more beautiful and regular shot. At a recent trial of this shot (No. 6), against that of Walker, Parker, and Co. at Wimbledon, the three competitors (Greener, Maleham, and Baker), each made much better patterns and penetration with it than with the Walker shot, both being as nearly as may be 270 pellets to the ounce. I can therefore confidently recommend the Lane and Nesham shot to my readers.

CHILLED SHOT, so called, has been used in this country for some years, but only to a very limited extent, until it was adopted by Mr. Greener for his "choke-bore" guns. It is called chilled from the supposition that it is merely lead suddenly cooled by meeting an upward current of cold air, as is actually done in America, but its hardness really depends on its being composed of an alloy of lead and antimony. Though considerably harder than the soft shot in ordinary use, it flattens out when shot against a hard substance, the difference between the two kinds in this respect being only a fifth. It is slightly more bulky than pure lead, to the extent of about one-tenth, and thus a *measure* holding an ounce of soft shot contains a considerably less weight of the hard. According to my own experiments hard shot is essential to the development of the full powers of the choke bore guns. At present it is only manufactured by Messrs. Roberts, Lampen, and Co., 5, West-street, Gateshead-on-Tyne, but they only sell it wholesale to the gunmakers, from whom it can always be procured.

MOULD SHOT.

L.G.	contains	in	the	oz.	5½ pellets.
M.G.	,,	,,	,,	8½	,,
S.G.	,,	,,	,,	11	,,
S.S.G.	,,	,,	,,	15	,,
S.S.S.G.	,,	,,	,,	17	,,

PATENT DROP SHOT.

A.A.	contains	in	the	oz.	40 pellets.
A.	,,	,,	,,	50	,,
B.B.	,,	,,	,,	58	,,
B.	,,	,,	,,	75	,,
1	,,	,,	,,	82	,,
2	,,	,,	,,	112	,,
3	,,	,,	,,	135	,,
4	,,	,,	,,	177	,,
5	,,	,,	,,	218	,,
6	,,	,,	,,	270	,,
7	,,	,,	,,	341	,,
8	,,	,,	,,	600	,,
9	,,	,,	,,	984	,,
10	,,	,,	,,	1726	,,

Dust shot variable.

For general purposes, No. 6 is that usually preferred, and as an average shot it will suit well throughout the season; but let it always be remembered that, *cæteris paribus*, small bores take smaller shot than larger ones. Later in the season, No. 5 may be introduced into use. Some shoot with No. 4, and others again consider No. 7 or 8 not too small; but every sportsman has his own fancy, and much depends upon the distance at which he generally shoots. Some men prefer dropping their birds as soon as they are on the wing, and for them a scattering gun and small shot will answer the purpose better than a close-shooting gun with larger shot. Others, on the contrary, wait to cock their guns in the most deliberate way, and always allow their birds to get forty yards off before they fire; for these a larger shot must be used, or their game would almost always escape. Many men use mixed shot; but I believe this plan is essentially bad, producing an irregularity in the delivery which constantly leads to disappointment. Sometimes also it is oiled, but this also appears to be perfectly useless—though no doubt it is harmless, which cannot always be affirmed of useless inventions. It should never be forgotten that penetration increases with the size of the shot, while in exact proportion the pattern is more open.

ELEY'S WIRE CARTRIDGE.—This invention is only of use towards the end of the season, when game of all kinds becomes wild and difficult to approach. The cartridges are now much improved upon the original plan, and really deserve the encouragement of the sportsman. The best plan is to keep one barrel loaded with the cartridge, and the other with ordinary shot. There is no doubt that they will kill at

a greater distance than the ordinary charge of shot; at short distances they act like a ball, and can be used in the same way. Many believe that they wear out the gun very rapidly, by increased friction, caused by the bone-dust used in their composition, but there is no truth in this idea. The invention of the "choke bore" will, however, supersede these cartridges, as they cannot be used in barrels on that construction.

WADDING.—Almost all sportsmen now use, for common purposes, punched wadding made from pasteboard over the shot, and felt prepared with various oily matters between it and the powder. The latter seems to prevent leading, but in spite of it some muzzle-loading guns will acquire a lining of this metal. The wadding acts by impeding the explosion of the powder, and interposing between it and the shot, thus converting the shot into a kind of bullet till it leaves the barrel. For both muzzle and breech-loading guns the thick felt wad is now universally employed over the powder, and a thin pasteboard wad over the shot, it being desirable to avoid all unnecessary compression of the lead as it is passing up the barrel. The felt costs about 12*s.* to 14*s.* per 1000, and the card 5*s.* per 1000.

LANCASTER'S CONCENTRATORS.—A very simple expedient was brought out a few years ago by the celebrated C. Lancaster, consisting of a ring of thin pasteboard, resembling a section of a cartridge-case, which is put inside the cartridge, so as to surround the shot and keep it together for some distance after leaving the gun. According to the trials I have made with it in my own gun, I found the pattern and penetation both improved in a remarkable degree—so great as to be beyond all dispute. Thus, in a trial which I made at Mr. Lancaster's request in the spring of 1869, the following was the result, and I have since found the same percentage of improvement invariably take place with every gun I have tried. In this trial I used the 12-bore central-fire Westley Richards gun previously alluded to, and I provided also the cartridge cases, powder, shot (No. 6), wads, &c., necessary for loading. In my presence fifty cases were loaded in the ordinary way, and the same number with the "concentrators," which are merely cylinders of very hard paper, half an inch long, and fitting inside the cases. After putting in the shot, one of these cylinders is dropped upon it, the ordinary wad is then pushed in, driving down the cylinder around the shot, and the case is turned over in the ordinary way. After firing about a dozen shots of each kind at the target, and satisfying myself that there was no tendency to ball, I proceeded to try six consecutive shots of each kind for pattern, with the following results, the plate being of 30 inches diameter, and the range 40 yards :—

	Plain.	With Concentrators.
No. 1	154 pellets	172 pellets
No. 2	170 „	219 „
No. 3	139 „	203 „
No. 4	158 „	112 „
No. 5	196 „	224 „
No. 6	90 „	192 „
	907, average 151.	1122, average 187, or about 24 per cent. increase.

I then tried six shots of each for penetration, firing both barrels at the ordinary gunmaker's paper, which is much thinner than that used in the *Field* trial, viz.:—

	Plain.	With Concentrators.
No. 1 No. 2	Through 38.....	Through 45
No. 3 No. 4	„ 32.....	„ 48
No. 5 No. 6	„ 53.....	„ 64
	Total 123	157-or an increase of 28 per cent.

There was not a single failure, or approach to balling, in any one of the 50 shots fired, and I have no doubt whatever that the shooting of breech-loading guns, other than choke-bores, is improved to the extent which I have indicated. Sportsmen may, however, easily satisfy themselves by applying to Mr. Lancaster, who is, I believe, prepared to supply the concentrators in any numbers.

SECT. 10.—LOADING OF GUNS.

The old plan of loading at the muzzle by filling a measure with powder, and then refilling the same with shot, is

now almost entirely given up, except by the remnants of the last century. The spring powder-flask is, however, not free from danger, as in using it the charge may be ignited in the barrel from a piece of tow or cork having been left in it after cleaning, and being ignited by the first discharge, it fires the powder as it enters the barrel, and communicates within the flask; but by taking care to allow the spring to drive the slide of the flask well home before the charge is poured into the barrel, even if it is fired, no further damage would be likely to take place. Most guns require about as much powder as shot, *by measure*—that is, about one-seventh by weight, since shot generally weighs from seven to eight times as heavy as powder. The following proportions will be the best for muzzle-loaders, viz., from $2\frac{3}{4}$ to 3 drachms of powder, with from $1\frac{1}{8}$ to $1\frac{1}{4}$ ounces of shot. This is a smaller proportion of shot than was formerly directed; but I am persuaded that guns are more frequently overloaded with shot than the reverse. After using the powder-flask and returning it to the pocket, drive down each barrel, with the ramrod, a single piece of felt wadding. Give this two or three smart taps when home, by which the powder is driven well up into the nipple; then pour in the charge of shot, drive down another thin wad, gently return the ramrod, and take up the gun to put on the caps. These may be either carried loosely in the pocket, or in a charger, which latter has the advantage that it can be well used with the glove on, whilst the caps are too small for the fingers covered with leather. Before putting the cap on, examine if the powder makes its appearance at the nipple; and if not, give the gun two or three smart blows with the hand. No gun can be considered certain of discharging without this precaution, unless in very perfect order. After this, place the caps on, and push them well down with the thumb, not with the cock or striker. The gun is now ready for use. As guns vary much in their shooting, it is well to try various charges of powder and shot with the one which you are about to use, and to select the proportion of each which seems to suit your piece the best; but this is better left entirely to the gun-maker. The old shot-belt is now superseded by the shot-pouch, which performs its part wonderfully well, being everything which can be wanted, and safe in every way.

The following rules should be carefully remembered and followed in order to prevent accidents:—

Rule 1.—With muzzle-loaders always uncock the loaded barrel of your gun after discharging the other. The loaded one should be left at half-cock, and the other with the striker down on the nipple.

Rule 2.—In loading the last discharged barrel, always keep the loaded one farthest from the hand.

Rule 3.—Never put the caps on before loading—the cock may slip, even with the best lock. Moreover, the powder is prevented from reaching the end of the nipple.

Rule 4.—After the caps are on and pushed home, never leave the cock down on them, as in this position a blow on the cock, or even on the butt, may occasion an explosion.

Rule 5.—Never point the gun, or allow it to be pointed at, or passed by, either yourself or any living object except the game you are in pursuit of. This rule is especially necessary during cocking and uncocking, when the cock is very apt to slip from the hand of a cold or awkward person.

Rule 6.—With breech-loaders, always remove the loaded cartridges (which can be done with the greatest facility) on putting the gun out of the hand, even for luncheon.

Sect. 11.—Price of Guns.

The price of the ordinary percussion gun varies more than that of most articles—ranging from 10*s.* 6*d.* to 30*l.* for a double-barrelled gun, without its complement of powder-flask, &c. The first is out of the question with the sportsman, and the guns sold at that price *must* be made to sell, rather than for use. Nevertheless, thousands are sent abroad every year, and are used where accidental explosions are of little consequence,—that is to say, where life and limb are estimated at a lower rate than a few pounds will balance. For breechloaders the first London makers charge high; but they also pay high wages for first-rate workmen, and turn out nothing but safe and good articles.

With these makers, from 50 to 60 guineas is the ordinary price for a highly-finished double-barrelled gun, complete in case, with all its appurtenances. This certainly seems a large sum, considering that in Birmingham even a modern central-fire gun, which the tyro would scarcely know from the London make, is to be had, in case complete, for from 10*l.* to 30*l.* But many London makers may be named who supply guns at from 35 to 40 guineas each, quite up to what is required. Muzzle-loaders are now a drug, so that it is absurd to give any price, hundreds of the best make and in good condition being to be met with second-hand at from 5*l.* to 10*l.* each. With the exception of Mr. Purdey, Mr. C. Lancaster, Mr. Boss, and Mr. Grant, the average London prices are, for a best double central-fire gun, from 35 to 40 guineas.

Country makers charge from 25 to 35 guineas; and in Birmingham double guns, externally good looking, may be bought as low as 10 to 12 guineas; but on the score of safety I cannot advise their use.

Descriptions of the Rifle and the Duck-gun will be found under the chapters on Deer-staking and Wild-fowl Shooting.

Sect. 12.—Shooting Dress.

The Dress of the Shooter will vary according to the season and the kind of sport which he is engaged in; I shall therefore leave its consideration to each particular department.

Sect. 13.—Management of the Gun.

Before attempting to use the loaded gun, the shooter, whether young or old, should always make himself thoroughly master of it. Many of the accidents which so constantly occur arise solely from a neglect of this precaution; but if the sportsman is early drilled with the notion that he has a dangerous yet useful weapon in his hand, he will seldom forget the importance of the precept. One or two points should be diligently impressed, the most important one being—*never to point the gun at any time, by design or otherwise, at anything but the mark intended to be shot at.* It is astonishing how often this is neglected. Guns are often pointed in play at females with a desire to frighten them, or at dogs, cows, or other objects, in mere wantonness; or again, whilst carrying the gun, its muzzle is held so as to point to every part of the visible horizon. All this is unsportsmanlike, unsafe, and worse than useless. There can be but three directions at which the gun should ever be pointed:—first, while held with the trigger-guard on the fore-arm, the point should be directed to the earth; secondly, on the shoulder, the point should be directed to the heavens; and thirdly, to the mark, wherever that may be. With this proviso kept steadily in view, even the gun at full-cock is perfectly safe, except from bursting.

Sect. 14.—Learning to Shoot.

Cocking and Uncocking the Gun should be diligently practised with the gun unloaded, as it is of vast importance as regards safety to obtain full command over the lock. When a full mastery has been thus obtained, the pupil may proceed to

Shooting Sitting.—To effect this, put in a moderate charge of shot, say one ounce, and 2½ drachms of powder, and try your aim at any object, such as the stump of a tree, or a particular stone or brick in a wall, or any such mark, which will readily tell tales if you miss. Do not at first care much about hitting, but fire away until your nerves become quite steady; then try to hit a card or a sheet of paper, avoiding doors, which only lead to accidents, as the pupil is sure to pull the trigger after aiming at a door, even if it has been opened and a man, woman, or child has made his or her appearance at it. When the card can be readily hit, proceed to take aim at any small birds, &c., which may be seen or come within shot; and when all these still objects can be mastered, the first part of your education may be said to have been satisfactorily accomplished. In taking aim, it is better to keep both eyes open, though many first-rate shots always close the left eye.

Shooting Flying.—This is the grand object of the shooter's ambition, and one which he will soon learn to accomplish with greater certainty, if his nerves are good, and he has only ordinary quickness and tact, improved by practice. The best way of learning to shoot flying is to begin by having a

potato or turnip thrown across or away from you, and then shooting at it in the air. Nothing is more easy than to hit this while at its highest point, since it is then almost stationary; but the aim should be to hit the object while at its greatest pace. Then begin by shooting at any small birds which may cross your path on the wing. They will afford good practice, and show the necessity for shooting well in front of every bird when flying across the gun. According to the speed of flight must be the advance of your aim; but, on an average, one foot is not too much for most birds of rapid flight, and is scarcely enough for the snipe, when making a dart; still, if that allowance is made as a rule, it will soon be varied a little by the experienced shot, according to the speed of the bird. Next get some sparrows, or other small birds, and, going to an open field, let them fly one at a time, shooting at them, when at about 20 yards off, with dust-shot. If these birds are so scarce as not to be easily obtained in any number, the better plan is to begin by putting a collar of paper round the necks of the first, so that their flight may be impeded. As these birds always go straight from you, the gun should be aimed well at them, a little over their backs, and not as in cross shots. After this, the next lesson may be at any small birds which happen to come in your way, such as blackbirds, or thrushes, or sparrows, chaffinches, &c. These afford very good marks, and will do everything but get rid of the nervousness which the sudden rise of partridges or grouse always occasions at first.

A MECHANICAL SUBSTITUTE for live shots has been lately brought out by Mr. Bussey, of the Museum Works, Peckham Rye, London, called the Gyro Pigeon. An archimedean fan or screw is discharged from a fixed machine by rotary power, and it in its whirr resembles that of the partridge, so that it accustoms the gunner to the startling effect of that bird rising under his efforts, and is really a very useful means of learning to shoot without game. The trap may be set at any angle rendered unknown to the shooter by a screen, and thus in every respect the rise of the partridge or grouse is closely imitated. Unfortunately the flight is not more than 30 to 35 yards, so that the trap should be at least 20 yards from the foot of the pupil. The cost of the whole of this apparatus is about 2*l*.

HEDGE-POPPING is very good practice, and should be diligently followed by the young shooter, especially if blackbirds can be found. Its successful prosecution gives great confidence, and it insures quickness, and a knowledge of the range or distance at which your game must be killed.

There is a sport which is now indulged in extensively by crack shots, which, however, only requires knack and quickness—I allude to.

PIGEON-TRAP SHOOTING.—This sport, which had been confined to a few country public-houses since the closure of the Red House at Battersea, suddenly sprang again into fashion in the year 1858, at Hornsey-wood House, where it maintained its position under the patronage of Mr. Heathcote until the ground was taken to make Finsbury Park. Clubs were then formed at Hurlingham Park and Shepherd's Bush, for the express purpose of encouraging pigeon-trap shooting, and are extensively patronized by London fashionables. Instead of the old H and T (heads and tails) traps, five are now used, arranged in a crescent before the shooter, at five yards from one another, and at such a distance from each subscriber to the stake as shall be considered to put all on an equality, ranging from eighteen yards to thirty-two. The bird to be released is fixed on by the throw of a die behind the back of the shooter, so that as far as possible all unfairness is prevented, as the person who pulls the strings cannot tell beforehand which he will be ordered to pull. At Manchester an electric trap, to insure impartiality has been introduced with success, but it is very costly.

The following are the Rules of the Hurlingham Club:—

1. The referee's decision shall be final.

2. The gun must not be held to the shoulder until the shooter has called "Pull." The butt must be clear below the arm-pit, otherwise the referee shall declare no bird.

3. A miss-fire is no shot, provided the shooter has a cap or tube on the gun and it be cocked and loaded, or, in case of a breech-loader, if the cartridge does not explode.

4. If the shooter's gun miss fire

with the first barrel and he use the second and miss, the bird is to be scored lost.

5. If the miss-fire occurs with the second barrel, the shooter, having failed to kill with his first, may claim another bird; but he must fire off the first barrel with a cap on and a full charge of powder, or, in case of a breech-loader, with a blank cartridge, before firing the second. And he must not pull both triggers at the same time.

6. The shooter in a match or sweepstakes shall be at his shooting mark at the expiration of two minutes from the last shot, unless in the case of an accident, when the referee shall decide what time he shall be allowed to remedy the accident.

7. The shooter's feet shall be behind the shooting mark, until after his gun is discharged. If, in the opinion of the referee, the shooter is balked by any antagonist or looker-on, or by the trapper, whether by accident or otherwise, he may be allowed another bird.

8. The shooter, when he is at his mark ready to shoot, shall give the caution "Are you ready?" to the puller, and then call "Pull." Should the trap be pulled without the word being given, the shooter may take the bird or not; but if he fires, the bird must be deemed to be taken.

9. If, on the trap being pulled, the bird does not rise, it is at the option of the shooter to take it or not; if not, he must declare it by saying "No bird;" but should he fire after declaring, it is not to be scored for or against him.

10. Each bird must be recovered within the boundary, if required by any party interested, or it must be scored lost.

11. If a bird that has been shot at perches or settles on the top of the fence, or on any part of the buildings higher than the fence, it is to be scored a lost bird.

12. If a bird once out of the ground should return and fall dead within the boundary, it must be scored a lost bird.

13. If the shooter advances to the mark and orders the trap to be pulled, and does not shoot at the bird, or his gun is not properly loaded, or does not go off, owing to his own negligence, that bird is to be scored lost.

14. Should a bird that has been shot at be flying away, and a bystander fires and brings the bird down within the boundary, the referee may, if satisfied the bird would not have fallen by the gun of the shooter, order it to be scored a lost bird; or if satisfied that the bird would have fallen, may order it to be scored a dead bird; or if in doubt on the subject, he may order the shooter to shoot at another bird.

15. A bird shot on the ground with the first barrel is "no bird," but it may be shot on the ground with the second barrel if it has been fired at with the first barrel while on the wing; but if the shooter misses with the first and discharges his second barrel, it is to be accounted a lost bird in case of not falling within bounds.

16. Only one person is to be allowed to pick up the bird, or a dog (if the shooter will allow it). No instrument is to be used for this purpose.

17. In single shooting, if more than one bird is liberated, the shooter may call "No bird," and claim another shot. But if he shoots, he must abide by the consequences.

18. In double shooting, when more than two traps are pulled, the shooter, as above, may call "No bird," and claim two more. But if he shoots, he must likewise abide by the consequences.

19. In shooting from H and T traps, the trap must be pulled according to the toss, but not more than one string must be pulled. Traps to be filled and tossed for every shot.

20. The shooter must not leave the shooting mark under any pretence to follow up any bird that will not rise, nor may he return to his mark, after he has once quitted it, to fire his second barrel.

21. In matches or in sweepstakes, when shot is limited, any shooter found to have in his gun more shot than is allowed is to be at once disqualified.

22. Any shooter is compelled to unload his gun on being challenged; but if the charge is found not to exceed the allowance, the challenger shall pay forthwith 1*l.* to the shooter.

23. A shooter may at any time object to the use of a spring trap, either in a match or sweepstakes.

24. None but members can shoot, except on the occasion of private matches.

25. No wire cartridges allowed, or

other substance to be mixed with the shot; but concentrators are allowed.

26. In all handicaps, sweepstakes, or matches, the standard bore of the gun is No. 12. Members shooting with less, to go in at the rate of half a yard for every bore less than twelve, down to sixteen-bore. Eleven-bore guns to stand back half a yard from the handicap distance, and no gun over eleven bore allowed.

27. The winner of a sweepstakes of the value of ten sovereigns, including his own stake, goes back two yards; under that sum, one yard, provided there be over five shooters. But in case of the winner being at thirty-one yards, then he remains, and the rest who have not won or divided go in two yards or one yard, as the case may be, according to sum won. Gentlemen in dividing a sweep to be guided by the same rule.

28. Should any member shoot at a distance nearer than that at which he is handicapped, it shall be scored no bird.

29. One and a quarter ounce of shot shall be the maximum charge for all occasions, excepting private matches.

30. All muzzle-loaders shall be loaded with shot from the club bowls, and 1*s.* per day shall be charged each shooter for shot.

The gun selected should be a hard hitter, and for this reason the muzzle-loader is still preferred by some crack shots, and the pin breech-loader by a few, but the majority now use the central-fire. The new choke-bore has only yet been tried in public by Captain Bogardus, who with a heavy 12-bore made by Messrs. Scott and Son has hitherto done extremely well at pigeons. The pigeons used ought to be blue rocks, but any of the varieties of the pigeon that have been reared at lonely farmhouses will do quite as well, the object being to have them strong and wild.

Swallow Shooting is another practice which many indulge in, with a view to improve their hands for future shooting at game. It differs, however, so much from most other kinds, that it is of little use. The swallow-shooter generally selects the moment when the bird is balancing herself, in her hawking for flies, when she is in fact almost stationary. If the shooter can kill his swallow when at full swing, and making her darts, he is perhaps very likely to command a snipe or woodcock, especially the former, whose queer gyrations are something like those of the swallow when avoiding the gun; but swallow-shooters seldom attempt this, and content themselves with killing at the most favourable time. It is, on the whole, a course not to be recommended, being useless as an improvement to the shooter, and destructive to a very harmless and, indeed, useful bird.

Rook Shooting is of very little use as an introduction to other kinds of shooting, because it is generally practised with a small rifle, or with an air-gun. No one dreams of shooting these birds sitting, with shot, because they present such easy marks as to make it butchery rather than sport. The rook-rifle is only a small rifle, carrying a very small bullet, and therefore adapted for the size of these birds, and the distance at which they are generally killed. It is always now made on some one of the various breech-loading plans. Mr. Rigby of Dublin and Mr. Holland of Bond-street, London, have obtained great celebrity for their little rifles. Mr. Baker of Fleet-street, sells a very useful one at the low price of 50*s.*

Lark Shooting may generally be obtained, as there are few localities where there are not many unpreserved farms, over which the young shooter may roam in pursuit of these birds. It is a capital introduction to larger game, and is deserving of the attention even of more advanced sportsmen than those for whose benefit I am now advising its prosecution. The shooter will find these birds in great numbers on vetches or seed-clover, or lucern, or, in fact, any green-crop which has afforded a cover for their nests. Here the young have been reared, and towards August they remain there in great numbers. By walking over these fields, enough shooting may be obtained to gratify any young sportsman, and by the end of August he may have attained great proficiency in the art. The only drawback to improvement for the purpose of partridge-shooting is, that the larks seldom cross the shooter as partridges and grouse do, but go straight away from him, or rise into the air. In the latter case, they are always out of shot before they begin to hover and sing, or they would tempt their fate sadly, as they would then afford an extremely

easy mark. The shooter must aim well over the backs of the larks, as they always rise more or less.

With these instructions, the shooter may proceed to the indulgence of his passion, either by grouse or partridge shooting, or wild-fowl or covert shooting—a description of each of which varieties of sport will be found under the proper heading.

CHAPTER III.

DOG BREAKING FOR OPEN SHOOTING.

Sect. 1.—Different Modes of finding Game.

In shooting, as carried on in this country, the game is found by the sportsman in three different modes,—first, on the open moors, stubbles, and marshes, by means of the powers of the pointer or setter; secondly, in coverts, by the aid of spaniels and beaters; and thirdly, in stalking deer on the hills, or wild-fowl in the lochs, by the eye of man, aided by the telescope. The present subject comprises the mode of teaching the dog to find game on the open moors, stubbles, and in the marshes. It is one which interests the lover of nature and of sport in as high a degree as any which is followed in this land of sports. It is true that shooting over dogs is unattended with danger, except from the bursting of the gun or from unpardonable carelessness, and it cannot compete in this respect with the tiger or elephant hunts of India or Africa; but it displays the instincts of the dog, and man's power over him, in a way to which no other sport can approach. Who that has seen a brace of dogs doing their work in gallant style, and setting and backing with that beautiful and excited attitude, which even a Landseer would fail in fully conveying to the canvas, can refuse his meed of praise and admiration to the efforts of their breaker? Here is no unnecessary cruelty; the poor animal sought for is not pursued till utterly unable to raise a gallop, but, unaware of its impending fate, it is killed dead (or it ought to be), and at once put out of its misery. For myself, fond though I am of coursing and hunting, yet, in my opinion, neither can compare in beauty with grouse or partridge shooting, especially the former. The season is so exhilarating, the country so wild, the air so fresh and healthful, and the constant excitement kept up by the working of the dogs is so pleasing, as to combine in making the sport to me the most captivating in the world. Hunting is, no doubt, like the fine burst of a full orchestra, though often with a long prefatory contemplation of a dreary green curtain, which sometimes remains down even for the whole day. Coursing may be compared to a series of pretty little airs, interrupted by constant dull and heavy intervals, during which there is no amusement whatever. But shooting is one long and delightful song, only interrupted by the mid-day lunch.

The drawback to this sport is its enormous expense. No one can enjoy *good* grouse-shooting under 200*l.* or 250*l.* per gun per annum; and this sum is generally far within the expense of the best moors. Partridge-shooting is not so costly; but even this sport will entail an expenditure to each gun of from 50*l.* to 150*l.* per annum—that is, if preserving is carried on to any extent, Wild partridge-shooting may, perhaps, be occasionally had at the cost only of a little gratitude, but seldom sufficiently good to remunerate the shooter for his trouble, excepting in the first week or ten days of September. Snipe-shooting, it is true, may often be met with at little outlay; but it has not the same charms for me which partridge or grouse-shooting presents,—the dogs cannot range in the same bold and dashing manner, for the body of the bird is too small to give out scent enough to be felt at any distance by the pointer; hence, it requires an old, steady, and somewhat pottering dog for this sport.

The first requisites for shooting are the birds themselves, and they would

naturally first occupy our attention; but as the two principal varieties of open shooting are only very slightly different from one another, I shall first describe the general principles in which the two agree, and then proceed to describe the peculiar characteristics of each. Open shooting, then, is the pursuit of grouse, partridges, or snipe, by means of the pointer or setter, aided by the gun and by markers, to enable the shooter to follow up his birds. I regret, however, to state that the prevailing fashion is to have the birds driven into turnips or other high covert, and then to walk them up.

Sect. 2.—Characteristics of Ground Birds.

The gun has been already described; and the markers are only specimens of the genus *homo*. In this chapter, therefore, I shall give a general description of the game pursued in open shooting, and of the dogs by which they are found. A great variety of birds are confined to the ground, and are found only, or chiefly, in the open, as, for instance, larks, quail, landrail, plover, &c.; and in some of their more prominent features they resemble one another. Both grouse and partridge are ground birds—that is, they do not perch on trees, but habitually frequent the ground, and, until driven there, do not enter woods or covert. They both lie, or squat, when alarmed by the approach of the sportsman or his dog; and, unless very wild, they allow the shooter to get within range before they rise, and they both often run before the dog, especially the grouse. Both give out two kinds of scent—the body-scent, which is wafted by the wind to some considerable distance, and the foot or ground-scent, which they leave behind them attached to the surface of the soil. Both keep together in broods until the pairing-time—the single brood of partridges or grouse being called a covey, and two or more broods found together a pack. Both are short-winged birds, and yet fly with astonishing velocity for a short distance, affording a fair mark for the sportsman, and trying his skill. Each, as well as the snipe, will be more minutely described under the chapter devoted to an account of their separate pursuits. —(See Grouse, Partridge, and Snipe Shooting.)

Sect. 3.—The Dogs used in Open Shooting.

In order to enable the sportsman to find his birds in the open, it is necessary that he shall avail himself of the powers of the dog, in some shape or other. Without its assistance, in the early part of the season, he would walk over many miles of ground before he would put up a covey, because they then lie so close as to elude his observation; and towards the end of the season he would be unable to circumvent them, because he would not know, by his own unaided powers, to what point to direct his attention and cunning till too late to profit by them.

At first, the spaniel was taught to hunt the birds within a given distance of its master; and it showed its proximity to its game by working its tail and giving tongue. The last sign being found inconvenient, in consequence of its alarming the birds, mute spaniels were employed, and also a large smooth dog, the pointer, resembling the spaniel in delicacy of nose and mode of working. These dogs were taught to work with great caution, and were at last broken so carefully, that when they caught the body-scent, instead of rushing in and putting up the birds, they were so excited, yet so afraid of incurring their master's displeasure, that they became stiffened from fear, yet still anxiously desiring to rush upon their prey. This has been cultivated and improved, till at last we possess in the pointer and setter the three essentials which combine to make the most extraordinary specimen of subserviency to man's purposes which any domestic animal affords. There is still the hunting power of the spaniel, its delicacy of nose, its power of standing work, and its lashing of the tail; but the tongue is mute, and the stop from fear has been developed and naturalised into a dead halt, which is really a true cataleptic condition, and which is often shown without the slightest fear of man, in the young puppy pointing in the fowl-yard.

The two varieties used are the pointer, which is smooth, and the setter, a rough dog, more nearly resembling the spaniel. The pointer, again, is either the old Spanish or the modern English pointer; and the setter is either the Irish, Scotch (Gordon),

Russian, or English. All these several varieties are given and fully described in the chapter treating of the natural history of the dog, in which they form the most prominent feature of the first division, comprehending "those dogs which find his game for man, leaving him to kill it." They all have the same family characteristics; all beat their ground in a regular and systematic way, when well broken; all ought to stand and back; and their education ought to be the same, whatever may be the variety of their breed or of the game to find which they may be devoted.

Sect. 4.—Breaking of Pointers and Setters.

In the present chapter, then, I shall take up the consideration of the "Setting-dog," as applied to the finding of game in the open, and shall examine into the best mode of fitting him for the task which he has to perform—this task is, the finding of ground-game in the open without springing it, and the showing that find by the dead stop or point. Now, it will be manifest that to perform this task well there are required, 1st, extraordinary acuteness of scent, for without this a dog cannot find his birds in the dry hot days of August and September; 2ndly, great powers of endurance, in order to enable the dog to beat over a sufficient extent of ground; 3rdly, steadiness of point, so that the sportsman may have time to come up and get within range before the birds are sprung; and 4thly, implicit obedience—active as well as passive—so that the dog shall not only abstain from doing wrong, but shall also do whatever his master orders him.

The best means of teaching the dog all those points which depend upon education (supposing, of course, that he has, by natural good breeding, those which are inherent in the animal himself—viz., the two good qualities first enumerated) is the subject I now proceed to consider. Many sportsmen may think it great drudgery to break their own dogs; and to some people no doubt it is so, and, in fact, by many it is an art wholly unattainable. It requires great patience, coupled with firmness and consistency, and also an amount of tact and love for the animal which everyone does not possess. But those who have these qualities, I should strongly recommend to exert themselves in breaking their own dogs; for there can be no doubt that dogs will never work for others as they do for those who have educated them. Either, therefore, your own keeper should break and work your dogs, or if you hunt them yourself, you should also break them. To me, it is the most interesting part connected with shooting; but as all men do not think alike, I offer this advice to those who prefer entrusting the breaking department to their keepers.

Breaking divided into Three Epochs.—Every dog's education should consist of three distinct parts: first, the preparatory; secondly, the intermediate; and thirdly, the complete. The first should be confined to the house, the road, and the field, without game; the second should not go beyond the finding of game, without killing it; whilst the third should extend to finding, killing, and retrieving it, even though the two last are not effected by him.

Sect. 5.—Preparatory Breaking.

With regard to this first department, many sportsmen think it time thrown away, and that their dogs may be suffered to run wild till the commencement of breaking to game. Now, I am ready to admit that there is some degree of truth in this, for I have seen more dogs spoiled by too early than by too late breaking. In this, however, much depends upon the breed and temper of the particular dog. If he is very high-couraged, and well-bred, he can hardly be too soon attacked, but if shy, and not well-bred, it is better to leave his education alone for a while. It is much easier to take the courage out of the very boldest animal than to put it into a timid one; but I am quite sure that the first part of the education of the pointer can hardly be too soon commenced, whatever difference of opinion may exist as to the second. Young dogs *must* be taken out to exercise, and *must* be taught to follow; they *must* be prevented from killing poultry and cats, and from stealing whatever is presented to their noses or their appetites.

While at exercise, they should be taught to come back instantly when called, either by the word "Heel," or "Come to heel," and should be compelled to remain there till allowed to run

on, when, by the word being given, "Hold up," they may again range forward, and should be made to do so. Every order should be firmly carried out, and care should be taken that its full execution can be compelled, if it is resisted. Next, give lessons in lying down when ordered, and do not suffer the dog to leave his position till "Hie on" is uttered. With the right hand, and whip if necessary, force the dog to the ground, crying "Down!" in a sonorous voice all the time, and at the same moment hold up the left hand, to enforce obedience by sign. As soon as the dog is perfect in dropping at the word "Down," or at the hand being held up, begin to try the plan at a yard or two's distance, and if he does not at once drop, walk up to him and make him; then leave him by degrees, and make him lie exactly where you left him, for any indefinite time, rewarding him by a piece of meat for obedience, and punishing him by a blow, or a pull of the ear, if not complying with your orders. Next, take him into his feeding-place, and put down his usual food; then, when he approaches it, cry "Toho! toho!" in a stern voice, and keep him from touching his food, either by a sharp tug of a check-collar, which you may use on him, or, if his courage is not too high, by the voice alone. If the puppy is under good command in all other respects, he will generally be easily stopped in going to his food, and will eye it eagerly and wistfully, without attempting to take it. Whenever the dog is taken into the fields (which should only be allowed where there is no game) he should be called back at every fence or stile if he attempts to pass or "break" it. If he does, he should be immediately called back, with the rate "Ware-fence!" and made to understand that he is never to leave the field in which his master is. This is easily done by checking him *the moment he passes the fence;* not by waiting till five minutes afterwards, as is often done, and then scolding him for a fault the nature of which he does not understand. If he chases any thing, rate him with "Ware-chase!" and even chastise him, if this rate is not enough. During the walk, the sportsman should take out a pocket-pistol, and, without noticing the dog, occasionally let it off; but beware of letting it off designedly to attract his notice; this is a very bad plan, and often occasions the very mischief it is intended to obviate. If, however, the discharge is made without reference to the dog, he soon disregards it, and afterwards will not be affected by a similar noise in the field.

Beyond what I have here described, I would never attempt to educate the young pointer or setter till he is at least ten months old, if a dog, or if a bitch, till nine months of age; but all the above points should be repeated, day afer day, and ground into the young dog, till he is as obedient as a machine. Two or three lessons will often *appear* to do all that is required; but it will be found that they are soon forgotten, if not kept up, and that, after a month, all will have to be done over again. From the commencement of the first part, therefore, till the time of beginning the second, the dog should be taken out nearly every day; and at least three times a week he should be drilled regularly in these simple first-principles, which are useful, as inculcating habits of implicit obedience, and also as the foundation of his future more complicated drilling.

Sect. 6.—Intermediate Education.

This should always commence at a time when birds will lie well, which is only at the pairing season, or at the end of August or beginning of September. We have, in the preparatory drill, arrived at a stage in which the dog is taught to come back when called, to go on when ordered, to lie down, to stop from gratifying his appetite at the word "Toho," to avoid breaking fence, and chasing cats, pigeons, &c.—the several words of command being "Heel," "Hold up," or "Hie on," "Down," "Toho," "Ware-fence," and "Ware-chase." All this may be taught to any dog, whether greyhound, pointer, spaniel, or house-dog; and there can be no excuse for neglecting this part of the education; but in the following divisions good or bad breed makes all the difference in the amount of trouble required, and in the degree of success which may be obtained. Some dogs may be broken in one day to a greater extent than others can in a month; but, generally speaking, in proportion to the courage will be the difficulty of high breaking. A high-couraged dog will often begin to point

as soon as he goes into the field; but the difficulty is to complete his drilling, so as to break him from chasing fur, or from running to his bird when dropped to the gun.

Time to begin Breaking.—The most important point in the intermediate education is to teach the young dog to range and beat his ground regularly and systematically. The time for this is, without doubt, in my opinion, the months of February and March, when any amount of time may be spared; and with most dogs it is no little which will suffice. General Hutchinson, however, who is certainly by far the best authority extant, contends that the pointer should never be thus broken, but that his education in ranging and pointing should be deferred till his birds can be killed to him. On this point I must beg to differ from him, though I do so most reluctantly, as the greatest part of his instructions are calculated to teach the correct mode of doing that which he wishes to inculcate; but here, I am confident he is wrong, and for the following weighty reasons:—It must be remembered, that the General is writing for the sportsman's use, and not for the gamekeeper. Now, if it is considered that the best part of the season for grouse-shooting and partridge-shooting lasts respectively very little more than a month, it will be seen that a great part of that month's shooting will be spoiled in breaking your dogs. If the whole sport consists in breaking dogs, then I can understand the propriety of devoting and sacrificing your best shooting-days to the operation; but as most men break in order to shoot, and do not shoot in order to break, it will be readily conceded that, if possible, that time should be avoided. Besides this, it will at once be admitted, that the age of four months is too young, and sixteen months too old, to begin to break; and yet that will, in nine cases out of ten, be his age in the September of the first and second years of a pointer's existence. No one would dispute the General's reasoning, if his premises were good—that is to say, if it could be shown that a dog *cannot* be well broken at pairing-time; but when it is notorious, and when I know, from my own experience in numberless instances, that the thing may be done, I cannot admit the truth and correctness of the data upon which he reasons. I have seen pointers go out, and stand, and back, the first day they ever saw game, but they were never made good dogs; nor did I ever see a dog which finally was of a first-rate class, made perfectly steady in one day, or even in a week. Two grand points are required—good finding and good working powers. With good finding-powers, a well-bred dog often becomes steady at the first or second point; but if his powers of endurance are good, his courage is generally so high, that at first he will be sure to chase his game when his eye catches sight, or to run to it when it falls. These errors (for errors they are as regards the sport, though venial in the puppy) require time to correct; and the act of correction generally spoils your shooting, by frightening your birds, and irritating your own nerves.

My advice, therefore, is to do all that can be done without the gun at the pairing-time, and to carry on to the second usage the lessons already begun. At this time, the dog should be taught the following further lessons: first, to range; second, to point; third, to back; fourth, to down charge; and the whole of the lessons inculcated in the first stage may be still further drilled into the dog, especially as to breaking fence and chasing. In fact, his education may be thoroughly completed, and he may be taught everything which will be required in September, unless it is wished that he should retrieve, which I believe to be in all cases very injurious to the pointer and setter; but of this hereafter. Let it, however, be remembered, that no matter how steady you may get a dog in the pairing season, without the gun, yet in August or September, when he sees the birds tumbling about his ears, and, moreover, when, instead of single birds before him he scents and sees perhaps fifteen or a score, he will at first be maddened by excitement, and will require a little correction. This is, however, very different to entire breaking, and will seldom take many hours, as the dog is only to be corrected, and not taught.

I have already remarked upon the difference between putting courage into a dog and taking it out; and the same may be said of the difference between putting sense into his head and taking it out. When once you have made him understand what he ought to do, half

the battle is over, and you may correct him to any extent, without fear of injury; but beware of punishment without his knowing why. I have had more than one dog which would, from excessive high courage, occasionally chase hares, or even birds, and would refuse to hunt till he had come to me to receive a flogging; immediately after which he would jump off, and work and point better than ever. These dogs did wrong knowingly, and I had no scruple in using the whip, and indeed without it they were never worth a farthing. Again, I have had others which would never do wrong knowingly, but would, in their extreme anxiety to find, be constantly making false points. Here, the whip would be worse than useless, and the only remedy is the grave—that is to say, if it is a confirmed failing. Well, then, having settled this knotty point, at least to my own satisfaction, I shall proceed to point out how the young pointer may be broken at pairing-time, intending the word pointer to apply to setters also.

The Range should be carefully taught, and in teaching it the pointing instinct is sure to be developed. Take out your young pointer at first with a wide-ranging dog, not too old, but perfectly under command. "Hold up" both, and take no notice at first of the young dog till he clearly understands what the sport is; this will not always be apparent to him till the other dog has found a bird or two; but when the young one sees the other stand, he is sure to be attracted to him, and he goes up in a wondering and curious manner, and begins, as it were, saying to him—What in the world do you look so stiff for? The puppy then sniffs about, and finally puts up the birds, upon which he expresses great delight, and chases them a few yards, or, if of high courage, as far as he can. I always like to see this; if well-bred and healthy, there is no fear as to his pointing steadily, and the desire to chase is an indication of courage.

After this, the young dog begins to range on his own account, and as soon as he will do so freely, I should dispense with the services of the old dog, for various reasons, not the least of which is, that he will derive no benefit himself from seeing the bad performances of his young and raw companion. Then, taking the young dog out by himself, begin at once to make him range to hand; make him work to the right by waving the hand in that direction, and to the left by doing the same to the left. Work him towards you by waving the hand to you; and from you, by casting the hand under, as in bowling. In doing this, if the dog does not readily comply with your orders, proceed to him, and, by your own example, induce him to follow your instructions, leaving no stone unturned to render him perfect in this all-important lesson. High-couraged dogs will readily take to their work, and will gallop at a very great pace for many hours together; by all means encourage this, and do not begin to rate them till they clearly understand what you want; never mind their flushing a few birds; this they are almost sure to do; but their instinct tells them that they have a more sure way of getting game than by chasing it, and after a few hours' work they begin to point.

During this lesson, the breaker should give the dog every advantage of wind, and should endeavour to hunt him exactly as he will hereafter do when using the gun, going steadily up wind, and working always in that direction, whether in the fields of inclosed countries, or on the open moors. If in the stubbles or young wheats, this cannot always be effected; then keep the young dog at heel till you have reached the leeward side, when he may be "hied on" and turned to the right or left. By no means should he be suffered to make his own selection; and if he goes off without orders, bring him back, and start him off in the contrary direction. When he has proceeded about from 60 to 100 yards, right or left (which, in an inclosed country, generally brings him to the hedge), whistle to him, and when you have caught his attention, wave him forward; then after he has gained 30 or 40 yards in the forward direction, wave him towards you. He will, in following your last order, cross immediately in front of you, because you have been walking forward gently during his progress, and as he will gallop about four times as fast as you walk, while you are walking 40 yards forward he will have reached the hedge, run up 30 yards, and reached your

front again; that is, 65 yards + 30 yards + 65 yards = 160 yards, or four times 40 yards. Repeat this operation in the opposite direction, waving him on as he passes in front of you, till he reaches the same distance to the right or left, then take him forward, and wave him to you again. In this way he will learn to beat the whole ground, by taking a breadth at a time, and will perceive the scent of any birds which may lie within thirty or forty yards of his line of beat.

This lesson is a very difficult one to teach, and requires great perseverance and tact to carry out with strictness and full success. Many days must be spent, and the dog will be steady enough to his "point" before he will have learnt it. It should always be taught single-handed, since the young dog is very apt to acquire the habit of following an older one and hunting with him—a trick which it is very difficult to break him of, and one which is unsightly and worse than useless, from exciting jealousy in the leader. Besides, most old partridge-dogs get a trick of running up the side of the hedge, and pottering there for game, generally rabbits, which they are very fond of making out. Now, this is a habit especially to be avoided, and yet it is the one which young dogs soonest acquire from others. They are some time learning it themselves; but the presence of hedges seems attractive to all dogs, and from the first they should be carefully watched when near them. The moment they dwell there, without birds are before them, call them off with the whistle, and send them forward, or else to the right or the left.

Do not suppose that the gun is required to develop the desire to range; if a dog is well-bred, and of high courage, as soon as he gets the first puff of the body-scent, he is sufficiently excited by it to induce him to hunt for many weeks together without hearing a shot fired. If a dog will not work with this stimulus in the spring sufficiently to learn his trade, depend upon it, when the hot days of August arrive and the ground is like iron, he will soon leave his master in the lurch, and refuse to work for him. I would not own a dog of this character, and I care not how he may be broken; but with a good and well-bred dog, the plan I have advocated is, I am sure, the correct one.

When the range, single-handed, is completely taught, it will not yet do to commence working double; but I shall omit all reference to this, as nothing is so easy as to put two good single dogs to work together, as far as range is concerned, if they work to hand, which a compliance with the above lesson will always enforce. Besides the usual quartering of the ground, there is another kind of range which must be taught—viz., that in which the pointer is lifted to the end of your beat, and made to work to you, as in a field for partridges, or with grouse, at the edge of a beat, when the wind is from that edge. In such a case, the sportsman should remain on the edge, and send his dog to beat to him; but it is very difficult to teach. It can only be done by degrees; but by patience, most dogs may be taught. The dog must be sent on by the hand, then stopped by the whistle, and made to turn to the right or left; then, when he has beat a sufficient distance, whistle, and catch his eye, beckon him to you, and after he has come forward, wave him to the opposite side, and repeat the instruction till he is quite under command. It is very useful towards the end of the season, as partridges and grouse will often lie with the dog beyond them, when they would run or get up wild if he pointed on your side. Its full perfection shows a very highly broken dog.

Pointing, Setting, or Standing.—These three appellations are given to the stiff cataleptic condition which the pointer or setter assumes when near his game. I have already remarked that it comes on without teaching in the well-bred young dog, though there can be no doubt that originally it was an acquired habit, and that in the present day it may be taught even to the greyhound or the lady's lapdog. It only requires a good nose, which even the greyhound possesses in a greater degree than he usually gets credit for, and which I have succeeded in developing in him, for curiosity's sake, to the full extent of pointing. By working the young dog in teaching him to range, in all probability several birds will be sprung; at first the dog stands astonished, then he runs cautiously forward, working his stern, and inhaling the foot-

scent left on the ground; while doing this, the breaker should walk up to him quietly, crying, "Toho! toho! toho!" in a prolonged and bass voice, but not in a scolding tone.

It is now that the breaker, if a bad one, produces a fault which can only be acquired from bad breaking—this is "blinking." It proceeds from a want of discernment in the breaker, who chastises the young dog for not pointing, whereas he should never do so until the point has become confirmed. When once this takes place, and the dog leaves his point to run up birds, the whip may be used, but very cautiously, unless the courage is very great. "Blinking" arises from a dog being disgusted with his business; and, as the presence of birds is associated with the whip, he naturally leaves them, from a dislike to that unpleasant alternative. The whip will never produce the true point, though it will steady it when once produced; and there is then less fear of disgusting the dog, already too much excited to care about punishment.

When the breaker gets to the dog, he should pat and encourage him, still crying "Toho!" and letting him lie on the foot-scent for a few seconds while thus patted; then, not letting him dwell any longer, cry "Hold up!" and proceed with the range. The next time the pointer comes near birds, the chances are that he scents them, and makes a slight stop, as if astonished; he then draws quickly forward, and puts up his game, which this time he generally chases. If the breaker is near enough, he should "Toho" the dog as soon as he feels his game, which will tend to make him dwell longer on the point, but not often to make him get stiff and steady. Each successive find makes him more and more stiff, and by repeating the "Toho," and increasing the encouragement in proportion to the increased length of stand, the dog becomes hourly improved, especially if he beats a considerable quantity of ground, and thereby tires himself.

If the dog, after the first five or six finds, continues to chase the birds, he should be brought back with the already taught rate, "Ware-chase;" but I have always found that, at first, it is better to avoid all rates if possible. Reward is the first essential to success; and when the system of encouragement has produced the zest, and it begins to lead to an overflow of spirits, the repressing hand of man may be exercised, but always with due caution. Whenever it is necessary to use the whip, let each stroke be followed by a caution in reference to the particular offence. Thus, if for chasing, "Ware-chase" must be repeated again and again, followed each time by a stroke of the whip, which "bites in" the words used. There is one most important particular to be invariably observed in using any correction—never let the dog leave you till he has made friends with you; do not hit, and let him escape without forgiveness, but keep hold of his collar (which every pointer and setter should wear) until you have done the scolding part; then gradually alter your tone, and appear to forgive him, by changing your manner; finally, pat him, cry, "Good dog, then!" and let him start afresh.

Some breeds will scarcely bear the whip at all, whilst others are of no use without it; and this latter condition is especially seen in the setter and the pointer crossed with the foxhound. This cross is very valuable, when well kept in hand, but by nature he is a most unruly dog; he can hardly be over-punished, and never owns a master till he has exercised his authority by using the whip.

When the point is once steadily made, so as to allow the breaker to walk up to his dog before the birds are sprung, he should pat and encourage the dog for some minutes, if possible, using the "Toho" in a low, cautious, yet pleased tone. This at once gratifies the dog, yet teaches him to exercise his caution; and the breaker should take care to crouch all the time, as if anxious to avoid springing the birds. All these little points are soon caught by the dog, who is a very highly imitative animal. Now, still patting the animal, walk crouchingly forwards, leaving him standing, and put up the birds; upon which he will attempt to come up, and perhaps chase, but he must now be made to drop, by crying "Down!" raising the hand at the same time, to enforce obedience. Keep him down for a few minutes, then pat him and encourage him, and "Hold up!" as before. This lesson must be repeated till the dog is perfectly steady

at his point, refuses to chase, and is "Down" the moment the birds are sprung.

If the point is a false one—that is, if the birds are gone—cry out to the dog "Gone away, gone away!" and make him understand that it is so, by kicking the grass or stubble, which shows him that they are really gone. Some dogs are very difficult to convince, especially if bred in-and-in, by which their cataleptic tendency is developed, and their reasoning powers are made subservient to it.

It is unnecessary to enter upon the mode of teaching dogs other than true-bred pointers or setters, to point. It is a tiresome task, and requires some degree of cruelty, by means of the check-collar and whip. As I said before, *any dog* may be taught, but few will be serviceable in the field; and, as the true breeds are so easily obtained, it is quite unsportsmanlike to attempt the use of any other.

Backing.—The young dog has now been brought to perfection, as far as he can be, for single-handed work, without the gun. The next lesson must be devoted to the instruction necessary for teaching him to back, and to beat his ground, in conjunction with his fellow. It must be remembered, that all this time the breaker has been cultivating the dog's love of approbation, which in this breed is peculiarly strong; he must now take care that it is not carried so far as to produce jealousy; this feeling is the bane of the shooter, and should be put down, when manifest, *vi et armis*. Most young dogs will try to get nearer to the birds than the one which first found them, and in doing so, will generally put them up. For this, they should be brought back to a place a full yard behind the first finder, and then made to stand, and be well rated in a scolding voice by "Toho!" and, after a repetition of the offence, by even a smart blow or two, according to the courage of the dog and the nature and degree of the offence.

When put to hunt together, dogs almost always watch one another, and the moment one finds and stands, the other catches sight of him, and at first is sure to run in and put up the game; or, if steady single-handed, and he has an equally good nose, he also points either a little before or behind the first finder. Some very highly-bred dogs, the first time they see another point, are rendered stiff, as if by sympathy, and "back" at once; but generally it requires the following process to be gone through:—As soon as the auxiliary (which should be a very steady dog) has pointed, and the young dog has caught sight, the breaker should call out his name, and add to it the word "Toho," repeating it in a scolding and cautioning tone, thus, "Bacchus! toho! toho! toho!" This use of the dog's name should not be carried into the shooting-field, but in breaking is very important. Dogs are very sly, and ready to make any excuse to themselves for not obeying orders; but if their names are actually used, they dare not disobey—at all events, they feel sure of the consequences if they do. On hearing this order, and knowing that it means them to stop, they do so; but knowing also that game is afoot, by the attitude of the other dog, they become, to a certain extent, stiffened into a semi-cataleptic condition, which is called "backing."

Any dog may be made to "back," whether he has a nose or not; but none can be rendered semi-cataleptic except the true breed. It is the same in "pointing;" here, as I before remarked, any dog with a good nose may be taught to point his game—if stopping, and abstaining from flushing it, can be so called; but the only "point" and "back" which can be depended upon is the one in which this cataleptic, or semi-cataleptic, condition of the nervous system is developed. It is exactly similar to the effect produced in the human being by the mesmerist. He can raise the arm of his subject, and, by a few passes, render it as stiff and rigid as the pointer's tail; and this is only the result of the counteracting powers of excitement and repression exerted at the same time. Just so the pointer is excited and repressed at the same moment, until, being of a highly nervous temperament, he is reduced to the rigid condition which is desired.

Wherever the second dog may be, however far from the pointing dog, he should at once stop and "back," and the breaker's whole care should be bestowed upon him. The other, as I before remarked, being steady, will demand no attention; but the young dog should be anxiously watched, and

stopped the moment he catches sight of the "point." When he has stopped, and is steadily "backing," walk up to him, and praise him, saying, "Good dog—toho! Good dog—toho!" Then, if the birds rise, make him drop, by "Down! good dog," in an encouraging yet firm voice. Walk a little way towards the other dog, still keeping both down; and if the young dog offers to stir, rate him severely; after a minute or two, "Hie on" both.

Be very particular that your auxiliary dog does not run jealous, and that he "backs" steadily, in case the young dog finds. This is very important, for many old dogs refuse to "back" a young one till they have once or twice satisfied themselves that their "point" is correct. But such jealous and crafty dogs are not fit to help to break others to "back," since their declining to "back" the young dog encourages him to return the compliment, and they mutually increase each other's jealousy. If the birds lie very steadily to the old dog's "point," first encourage the young dog, then leave him, and walk up to the old one, and put up the birds, making each dog drop on his own ground.

This lesson is rather difficult, as the "backing" dog naturally runs up to his master; and if he will not stop and drop to the hand, and "down," a cord and stake must be fastened to a spike-collar, which he must wear, and the stake must be driven into the ground before leaving him, or an assistant must go up and put up the birds; but I prefer doing everything without any looker-on, as in that case the dog has his attention wholly directed to your own movements.

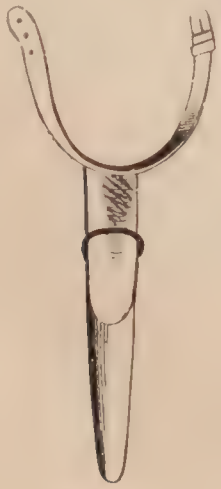
Some very high-couraged dogs are very difficult to make "back;" and, indeed, I have known many highly-bred ones in which the cataleptic condition was never fully developed. They were made to stop, but not to "back;" that is to say, they were not influenced by any condition but fear.

I once had a very extraordinary young pointer, the fastest and best-nosed single-handed dog I ever saw, which took many months to teach this accomplishment. He was "steady before," when I bought him, at twelve months of age, at the end of the pairing-season. I had him with me all the summer, and got him under beautiful command on the road. He was a very small and delicate-looking dog, but the most untiring animal I ever had; no day was too hot or too long for him, and, with anything like a scent, he would beat any dog I ever saw—always except that wonderful animal Mr. Garth's "Drake." When I began, about the 18th of August, he was steady enough singly, but the moment I put him down with another dog he would neither "point" nor "back," his whole attention being devoted to taking the other dog's point. I thought I would tire him down, and I worked him for one whole week by myself or servant, for at least six or eight hours a day, going as fast as a foxhound in view, or nearly so. But at the end of that time he was as fresh as ever; and though he had settled down to a steady point himself, he would never abstain from running up and taking his fellow's. Very fortunately, he staked himself in chasing a hare, by which he lost a good deal of blood and lamed himself, and in this state I began the season; and on three legs, weakened from loss of blood, he was glad to obey my voice, and stopped, though he never "backed" in good style. By the end of the partridge-season he was steady enough in all points but "Down charge," as he *would* go to his bird if he saw it drop, and no punishment stopped him. This fault lasted even to his eighth year, though constantly shot over by a very good man after I sold him. This dog, however, next pairing-time, was as bad as ever behind another dog, and never could be depended on, in this respect, till his third season. Even then his "back" was an apology for the real thing; and while his "point" was perfection in beauty and rigidity, the "back" was totally the reverse. He was crossed with the greyhound; which cross, I believe, is far superior to the foxhound, for the purpose of giving courage and speed; and though increasing the pointer's tendency to chase hares, is not here worse than the foxhound. I have known one very perfect specimen in the first cross, which was almost as fast as the greyhound which got her, and yet "pointed" and "backed" as steadily as I ever saw; but this bitch, when put to a thoroughbred old-fashioned pointer, threw a lot of puppies which never could be thoroughly broken, and resembled the

greyhound much more than the mother did. Such is the uncertainty of cross-breeding.

Sect. 7.—Mechanical Remedies for Faults.

These are, first, the puzzle-peg; and secondly, the check-collar. The former is unduly neglected, in my opinion, by General Hutchinson, as it really is a very useful means of correcting a very troublesome fault. I confess that, on this point, I think the General is wrong, as I do not believe that his mode of teaching the pointer to raise his head will answer in the field. Still, I am open to the conviction of experience; but I never found that anything taught in the closet, as it were, is useful in the field, except when it is connected with the fear of punishment. However you may have inculcated the raising of the head at the word of command which he uses—viz., "Up!"—yet, when there is the temptation afforded by the foot-scent, the dog, if naturally inclined to hunt foot, will lower his nose and dwell on the scent. It is the breed which is in fault, and nothing but compulsion will remedy it; besides, when a dog is a hundred yards off, how can the word "up" be heard? A whistle here is hardly to be conveyed to him; and yet it is under a hedge at this distance that the dog generally foots his bird, and dwells on it to the extent usually called "pottering."



PUZZLE-PEG.

The PUZZLE-PEG is a piece of wood, about a foot in length, pointed at one end, and flattened towards the other; an ordinary leather collar is nailed to the flat end, and about four inches from this a leather strap or piece of cord is nailed to the two sides, leaving just sufficient space for the dog's lower jaw to be inserted, with the strap lying between the canine teeth and molars. By the constant use of this puzzle-peg—which does not interfere with the dog's ranging, and only prevents his lapping water in shallow ponds or rivers which will not allow him to bury the "puzzle peg" in them—the dog loses, by habit, the tendency to stoop, and I have known a natural "potterer" become converted into a fine, handsome, and bold ranger. The chances, however, are much against this fortunate result, and I would never speculate upon it; it is the worst defect, next to refusing to range altogether, which is a fault that is absolutely incurable.

The CHECK-CORD is intended to be applied to those dogs which range too wide, or refuse to "back," or to "point" even when very troublesome to break. It is merely a line of various degrees of size and length, according to the strength and courage of the dog; it may be generally of the length of twenty yards, and of good stout cord, well twisted, yet not too heavy. The object is not always to tire the dog, but to gain absolute command over his motions, in bringing him back to you, or in stopping him from chasing. Of course, the longer and heavier the cord, the more it tires the dog: but some animals are so delicate, that they refuse to range with it, and yet are difficult to stop; altogether, however, it is an exceedingly useful mode of bringing dogs under command; but it is not so necessary for the pointer as for the spaniel, or even the setter, which is a bolder, hardier, and more headstrong dog than the pointer.

Sect. 8.—Retrieving.

I have not said one word of this part of the education of the pointer, because I am strongly of opinion that the true sportsman should always have a separate dog for this purpose. Whether in partridge or grouse shooting, the same kind of nose and style of hunting will rarely serve the purpose of finding live and dead or wounded birds. For partridge and grouse shooting, I am quite

sure that far more game will be bagged, if the pointers are never suffered to touch a feather, than if used as retrievers as well as in their ordinary capacities.

The best dog for this purpose is, I think, a little rough terrier, expressly broken to retrieve, and kept for this alone. He has a wonderful nose, is perfectly under command (much more so than the spaniel or retriever proper) and will retrieve any winged game, from the snipe to the pheasant, though he is too small to carry a hare. Such dogs I have seen do wonders, and follow the shooters all day, "backing" the pointers in the most steady manner, and *making no fuss* when called upon to retrieve, so that they will often fetch a wounded bird, if permitted, from the middle of a scattered covey, without flushing one; whereas the pointer must either be taken from his point, or the other birds must be put up and shot at, before the wounded bird is retrieved. Moreover, they are pleasant general companions in and out of the house, and the cost of their keep is next to nothing. They should be taught to be completely under command, and the pointers should be made to be perfectly free from jealousy, which they soon become *when the retriever is small*, but refuse with an ordinary-sized one. I shall give the mode of education of these useful little dogs here, since it will complete the lessons necessary for open shooting. Of course, the same instruction will apply to the pointer, when he is required to retrieve; but I am quite confident that the extra keep of this little retriever will be well bestowed, and he will be also useful in covert-shooting.

All retrievers should be taught early. At two or three months old, begin by teaching them to lay hold of any soft substance, and take it from you; this develops the instinct which they have, of appropriating to their master's use whatever he wishes: the stick, the glove, or the ball, has no allurement for the puppy naturally; but you must give him the zest for it, by playing with him, taking care not to let him worry the glove or ball, which would produce a hard mouth. All young dogs have an irritable mouth while teething, and at this time they like to have any soft substance drawn from their teeth. By taking advantage of this period, they may be made to appropriate to themselves the glove or the stick held to them; then, when they become fond of it, throw it a yard or two, and, if likely to become retrievers, they soon run to it, lay hold of it, and bring it to you, for the purpose of having a second and third edition of the same kind of play.

After giving them only a few of these lessons daily, and not sufficient to nauseate them, they are, as they grow older, accustomed to fetch anything which is thrown, and often may be made to pick up whatever they are told to lift, by the words, "Fetch it," pointing to the particular article. In throwing the glove for them to fetch, occasionally throw it into high grass, or, in the garden, into carrots or potatoes; then cry, "Seek, seek," and encourage the dog to look for it, by appearing to look for it yourself. After six months of age, the puppy may be taught to find and bring young rabbits, purposely concealed in grass, &c.; but should never be allowed to hunt rats, since they, by their bite, raise the dog's ire, and cause him to retaliate, and consequently to become hard-mouthed with his game.

When the retriever has learnt to find and bring young rabbits without injury, and is under very good command, he may safely be taken out with pointers, but at first should be led by a servant, and only suffered to go loose when a bird is killed. He will then at once proceed to find it, and bring it to you; during all which time the pointers must be still "down," let the search be ever so long and distant. After a short time, when the retriever has been thoroughly accustomed to the work he has to do, he may be allowed to go at large, keeping him always at the heel of the shooter, and only suffering him to retrieve at the words, "Seek, seek," if the birds are wounded, or, "Fetch it," if dead.

The retriever should always be made to bring the game to the actual foot, or even the hand, of the shooter; and not lay it down at a distance, as he may choose sometimes to leave it on the wrong side of a fence or river. In teaching these dogs to take water, it is only necessary to begin in the summer, and to avoid throwing them in. They will always, at that season, readily enter the water, and fetch out of it anything that may be floating.

Nothing is so easy as to teach a

retriever to do his work, but it requires a long time and much patience. The chief difficulty is to keep him at heel till ordered off; but by firmness, and a little system of rewards and punishments, this may always be effected.

I shall go more at length into the system of teaching retrievers under the heads of Grouse, Partridge, and Wild-fowl Shooting, where the actual working of the pointer, setter, and retriever will be more fully gone into.

Hitherto, I have described the preparation only of the gun and the dog for this sport; in the next chapter I shall treat of the sport itself.

KENNELS and Kennel Management will be found described in Part IV., Book III., Chapter I.

CHAPTER IV.

GROUSE-SHOOTING.

SECT. 1.—VARIETIES AND HABITS OF GROUSE.

VARIETIES OF GROUSE.—In the consideration of this fascinating sport, I shall first treat of the varieties and habits of grouse; next, of the dress and general accoutrements of the shooter; then of the varieties, selection, and management of the dog for finding them; and lastly, of the address which is required in the portsman.

The sub-family usually called Grouse, or in the language of the naturalist, *Tetrao nidæ*, is composed, as far as the British Isles are concerned, of four species:—1st, the *Tetrao Urogallus*, CAPERCAILLIE, or COCK OF THE WOODS; 2nd, *Tetrao Tetrix*, BLACK GAME; 3rd, *Lagopus scoticus*, or RED GROUSE; and 4th, *Lagopus mutus*, the PTARMIGAN.

All these are now to be found in Great Britain, and even the CAPERCAILLIE, which had become so rare as only to be seen where it could scarcely be called wild, is not very uncommon, having been reintroduced on the estate of the late Marquis of Breadalbane. It was formerly quite common in Ireland and Scotland, and is now often imported into Leadenhall market, from Sweden, in the dead state, and during the cold weather. The male is nearly as large as the turkey, but the female is much less than the hen of that bird. The "play" of the capercaillie is very remarkable; it is confined to the males, who indulge

in it in order to astonish and excite the hens, just as the turkey-cock does in our farm-yards, but more resembling that bird when his ire is aroused by a scarlet cloak. The nest is made on the ground, and the number of eggs is about eight to twelve.

THE BLACK COCK and GREY HEN are met with in England and Scotland, being, however, confined to wild and secluded forests, but the attempts to introduce them into Ireland have hitherto failed. In England, this species is found occasionally in the New Forest, and on the Quantock Hills in Somersetshire, as well as in some parts of Dartmoor and Exmoor. Besides these localities, it is thinly scattered on the northern moors of Yorkshire, Cumberland, and Northumberland. The male bird is very handsome, and weighs often nearly four pounds. The whole body is black, with a beautiful glossy blue over the neck and back; the wing-coverts are brownish, with the greater coverts white, forming a white spot on the shoulder when the wing is closed; the tail is black, and much forked; the legs and thighs are covered with mottled feathers, and the toes toothed; the eye has a red spot above and a white one below it. The grey hen is only half the weight of the cock; she is barred with dusky red and black above, and dusky red and white below; the tail is slightly forked. The nest is made on the ground, with an average of eight eggs, which are of a yellowish white ground, marked with blotches of reddish specks. The young birds keep together till the spring, when a battle takes place among the cocks for that supremacy in war which leads to the same degree of success in love; this arises from their polygamous habit, by which the hens are seized upon by one cock, the boldest in the hatch, whilst the remainder, being defeated in the battle, remain in a state of compulsory celibacy. At the beginning of the season black game are very tame, and easily shot: they may then generally be found in rushy places, where they feed upon the rush seeds, and lie very close in this cover; on the moors, they feed also on cranberries and whortleberries, as well as on other seeds; in default of these, and when driven by hunger to the inclosures, picking up wheat, oats, or barley. As the season advances they are compelled to have recourse to this farmer's food; but they then become very wild, and difficult to get near; it is only by "stalking" them, or lying in wait for them when they come to feed, that many shots can be obtained. In Scotland, as the harvest is often late, they attack the corn in the sheaves, and by hiding in one of the "stooks," or bundles of sheaves, a shot may generally be depended upon; but this is tiresome work, and not worthy to be called grouse-shooting. In winter, they feed upon the tops of the juniper, birch, and alder, and may generally be found in the woods which are composed of these trees; they then afford much less sport than in the autumn, and your success will depend much upon the nature of the ground where they are found. If near high mountains, they are sure to leave the woods or moors the moment you approach, and it is then impossible to get at them, except by very careful "stalking." If, however, they are found in a tolerably level country, with a series of small coverts, there is a reasonable chance of getting a good day's sport. In the early part of the season, when on the open moors, they will be found either in the rushy places above alluded to, or in the brushwood, near the oat-fields, and they lie so close that with a steady dog you may put up each bird singly. Great care and quiet must be observed in hunting your dogs, and your gun must be a good hard-shooting one, as the black-cock takes off a very heavy charge. No. 5 is the best size for this bird, except in the early part of the season, when No. 6 may suffice.

THE RED GROUSE, or Grouse, as it is generally called *par excellence*, is the shooter's delight, and affords more sport than all the other birds of the British Isles put together. It is exclusively a British bird, never being found elsewhere. In weight, it is not often much over 1½ lb., though sometimes coming up to 2 lb. Its peculiar mottled brown colour is so well known as to require no description. Red-grouse pair like the partridge, and lay about ten or twelve eggs on the ground, hatching early in May. Both of the old birds contribute to the cares of their young family, but after the young are able to shift for themselves, the cock does not keep so much with them as the hen. Grouse are found only on the moors, never being met

with far from the heather, which composes the principal part of their daily food. They also form a strong attachment to the particular spot in which they were hatched, especially if slightly undulating, as it generally is. On the level plains, at the foot of the hills, they will seldom long remain, even though hatched there, but make for the upper grounds as soon as disturbed; but if found on the side of a hill, they will often drop just over the brow, or fly around its base, alighting out of view of the shooter. In the middle of the day, grouse lie very close under the side of a large rock, or some other secluded spot; but in the winter season, the hours which divide their two feeding times are very few. In sultry weather they lie very close, and not having stirred perhaps for hours, the dogs will pass over them, or within a yard or two, without winding them. In long rains they collect under the side of a ravine, or beneath a rock or strong heather, and at this time good sport can scarcely be expected. It is then utterly useless to attempt to get near them, as they rise on the wing far out of shot. In boisterous winds, also, they are always wild, even in the first part of the season. It is at these times that all the artifices of the sportsman are required, and he should take advantage of every inequality of the ground, walking up the beds of rivulets, at the bottom of ravines, &c., and he should avoid bright colours in his dress. Grouse vary very much in colour and size in different localities. In Argyleshire they are larger and brighter in colour than elsewhere, except in the western part of the Highlands, where they are still redder and larger. In Perthshire, on the contrary, they are very small and dark. This arises from the fact, that on the west coast there is so much wet as to addle the eggs and reduce the numbers, and, consequently, to allow those that remain to grow to a good size. This will generally be the result of a bad hatching season, because, wherever food is scarce from over-stocking, the animals feeding on it will diminish in size; and the reverse takes place in diminished numbers; but this is not the cause of the alteration of colour, which is rather to be attributed to the change which occurs in the covert or heath frequented by them. It is a wonderful provision of nature, that all ground-birds, as well as other animals, soon assimilate in colour to the soil which they frequent. The ptarmigan and ermine, in winter, become white as the snow itself, as do the Alpine or blue hare, and numerous other animals. The grouse, consequently, when bred in heath of a bright colour, partake of the same rich bright red; whereas, when they are found on bare moors or stubbles, as in Yorkshire and the Lowlands of Scotland, they are of a much lighter brown, scarcely richer than the skylark in colour. Towards the end of winter, grouse feed more freely in the evening than in the morning, since the interval which they will have to pass without food is much longer, in consequence of the increased length of night. At this time, the afternoon shooting is by far the best, as grouse, unlike partridges, are best approached when on the feed. Grouse feed almost entirely on the tops of the heather, rarely taking any other food, except a few grass-seeds. They do not lie so close together at night as the partridge, but collect within a short distance of one another—not in one solid mass like that bird. These peculiarities should be known and appreciated by the grouse-shooter, as upon his knowledge of them depends his success in finding and bringing them to bag.

PTARMIGAN are chiefly found in the most inaccessible mountains, such as Ben Lomond, and the other Bens. They afford no sport, being tame and dull of wing; they are, therefore, seldom sought after by the sportsman, unless he fails in procuring good sport with wilder and more wary birds. Like the red-grouse in their habits of breeding and pairing, and in packing also, they differ in being dull and stupid. Their legs and feet are feathered down to the claws, and in size they come very nearly up to the red variety. In summer, the colour of these birds is of a mottled grey, not nearly so red as the red-grouse, but barred and marked in the same way; in winter this becomes of a pure white, with an occasional spot of grey remaining; but the more northerly the *habitat*, the whiter the plumage. The nest is exactly like that of the red-grouse; and in general air and manner, when undisturbed, this bird resembles its more prized congener. There is one

remarkable point of difference between these birds, which again contrasts in a singular way with their varied habits—this is, that, though the ptarmigan is a heavy and dull bird, as compared with the red-grouse, yet it can never be tamed, while the red-grouse is easily domesticated, and under favourable circumstances will breed in confinement. The ptarmigan feeds on rock-plants and berries. Its plumage changes in October, and the feathers not only become white, but thicker than before; by which provision of nature it is rendered capable of resisting the most severe cold. Indeed, Scotland does not seem sufficiently north for this bird, which prefers the inhospitable shores of Sweden and Norway. There it abounds, and is trapped or shot for the natives, as well as for the London market. The flavour of a good fleshy bird is very agreeable, though strongly impregnated with that of the plants upon which it feeds.

Sect. 2.—Dress and General Accoutrements.

Dress.—For the purpose of grouse-shooting, with any prospect of a successful issue, the dress of the shooter is of great importance. None of the game birds in this country are so wary and so difficult to approach as the grouse; and an old cock-bird will often defy the efforts of half a dozen sportsmen for many successive weeks, finally escaping to be the father of a future generation of clever ones. The colour of the clothes must therefore be attended to: but the most essential point is their suitability for preserving the health of the sportsman. In almost all cases, grouse frequent bleak and exposed moors, which are always cool, even in August, during windy and wet weather; mists and storms are constantly to be guarded against; and for these various reasons the material of the shooter's dress, throughout, should be woollen. The more hardy may perhaps venture to put on a linen jacket in the very bright and sunshiny days which often usher in the shooting season; but those who are subject to rheumatism or colds—in fact, all those who are not very hardy and healthful—should carefully adopt the precaution of adhering to wool. It may be woven into thin fabrics; but, however light, it is still a very different material, in its capacity of resisting wet and cold, from linen or cotton. Knickerbockers are found by experience to suit the walking over heather better than trousers by far, and are almost universal.

Flannel should be worn next the skin, as a precaution against the chill so often felt, when, on reaching the mountain-top, the skin, reeking with the perspiration poured out in its ascent, is suddenly submitted to the searching powers of the wind prevailing there. I should therefore strongly advise flannel waistcoats and drawers however fine they may be, and, above all, worsted stockings. These last are not only necessary for the purpose of avoiding a chill to the feet, but they also are by far the best for walking purposes; cotton and thread, and even silk, are too hard for the skin, and will blister most feet in a very disagreeable manner. If the skin is very irritable, so as to render the woollen unpleasant to the sensations, a pair of silk socks may be worn under them; but the soft pad of the woollen material is necessary, to enable the shooter to wear the strong heavy shoe which is required, without suffering from it.

For the feet there is nothing like the laced boot for those who are accustomed to have their ankles confined; the sole should be studded with nails; the heel, also, ought to bellow, and resemble the ordinary walking shoe. All shooting-boots should be waterproof, as the dews or rains often compel the sportsman to submit his feet to a worse ordeal than a pail of water. In ordering shooting-boots, it is never desirable to pocure them from a maker accustomed to consult appearances chiefly; on the contrary, a respectable cobbler is often the best man; but the leather is of more importance than any other point, and should be strong *cow*-calf, porpoise skin, or Russian leather. It is a remarkable fact, that the skin of the female calf is much more soft and yielding, and yet more durable and waterproof, than that of the male. The *cow*-calf-skin can only be recognised, when entire, by the remnant of the teat, which is always left in skinning, and which a good maker will select with care for his sporting customers. Durability is not here a mere matter of £ s. d., for no money can supply the place of a pair of shoes to

which the feet are accustomed. Every one knows the misery of walking in a new pair of boots, even when the distance is not great; but when many hours a day must be devoted to a pursuit like grouse-shooting, it is all-important to provide against the discomfort attending upon a sore heel or a blistered toe; let the shooter therefore, some months before the season, provide himself with what will fit him, and let him wear them a little every day till they have taken the form of the feet; then let him put them carefully away, after having them dressed with a composition made of—boiled linseed oil, one pint; bees'-wax and resin, of each, four ounces, melted together, and stirred till cold.

All shooting boots should have large-headed nails in the sole and heel, as, both in greasy fallows and on bare rocks, the foot, without them, slips about in a disagreeable and even dangerous manner. It will insure their future fit, if the boots are wetted by walking into water before they are dressed with the composition; and in hot summer weather they may be suffered to dry on the feet, taking care to keep moving during that time, and to dry them thoroughly before dressing them. If the feet are very tender, and liable to excoriate, the best way is to soak them at night in hot alum and water, and in the morning to rub a little neats'-foot oil over them, before putting on the stocking.

I have already said that the dress should be woollen; and any of the plain Scotch tweeds will answer the purpose, using the same material for trousers, waistcoat, and shooting-coat. The heather pattern is strongly recommended, from its resemblance to the general covert of the birds; but I believe that any plain and sombre colour will do, if neither too dark nor too light. Black and white alike strike the eye, by their contrast with the surrounding objects; but black and white *check* is as good a colour as any. The coat should have a strong patch of leather on each shoulder, for the gun to rest upon, and should be provided with pockets for cartridges; or if a belt is used for these, it is well to provide a flap to cover it, unless it is worn inside the coat. You will not require any game-pocket, because, at the grouse-season, no game will bear the heat of the body without becoming speedily tainted.

The Gun should be of the breech-loading kind already described as suitable to every variety of open-shooting, but should be a hard-hitter, and the shot used No. 6, early in the season, followed by No. 5 later on. It is far better than the muzzle-loader, especially early in the season, as will be evident to those who have experienced the annoyance of waiting to load, while a scattered covey are rising one after another too fast to allow of more than two or three shots at them, and yet all within range.

The other accessories are, for your own person—merely the loaded cartridge-cases, with belt, dog-whistle, knife, and dog-whip; and for your "gillie," as he is called in the North, a game-bag, dog-couples, some spare cartridges, gun-cover, and a Mackintosh coat.

Sect. 3.—Varieties, Selection, and Management of the Dog.

Pointer *v.* Setter.—Having now described the habits of the game to be found, and having already prepared the dogs for the task which they have to perform; having also prescribed the best gun and the most appropriate dress, I shall proceed to the investigation of the best mode of combining all these several elements, until they assume the form in which the cook or the Flemish school of painters especially delight—viz., Dead Game. I have already given instructions in the general management of the gun; and it is to be supposed that its possessor, before he ventures upon the moors for the first time in his life, has made himself as perfect as he can, by assassinating all the cock-sparrows and larks which he can come near. If the moor has been judiciously chosen and well preserved, it is fair to conclude that there are plenty of grouse upon it; and the only thing necessary is to find them, by means of the nose, sagacity, and steadiness of your dogs. But now comes the question which has been so often discussed—Are pointers or setters best for this purpose? The arguments on both sides would fill up many a page, if carried on in the loose rambling way which sportsmen so often indulge in; but it will be much simplified by

ascertaining what it is we are going to compare.

A man goes to the moors, and takes a lot of heavy lumbering pointers, yet with good noses, and he complains that they find him no game, and knock up in a couple of hours—and it is perfectly true that they do. The old Spanish pointer, or any dog with much of that blood in his veins, has not courage sufficient to carry him over the wide extent of ground which must be beaten in order to find these birds in any numbers. In partridge-shooting, the experienced eye will always, at each period of the day, inform the sportsman where he ought to look for his birds, and therefore, although his beat may include two thousand acres, yet at no one time does he wish to go over more than two or three hundred. The reason of this is, that at certain hours partridges are on their feed; at others, they are in the turnips, or the grass, or under the hedges; in dry days they are on the fallows, and in wet they are not in turnips, and so on. But the grouse-shooter cannot thus make his selection; he must go steadily on, as his whole lot of grouse are spread, perhaps, pretty regularly over the full extent of his moor, as far as he knows, at all events. A good-ranging dog, then, is a *sine quâ non;* and a steady old pointer is, by himself, a useless animal. The consequence of all this is that, since pointers include many heavy brutes in their ranks, the whole tribe must bear the blame.

Again, another man proceeds to his allotted ground with a team of setters, rivalling the whole world in beauty and apparent power of doing what is required; but they are as wild as hawks, and though occasionally setting and backing, they flush ten times more game than they find. These also, being setters, contribute to damage the reputation of their breed, and their owner gets rid of them, in the belief that, "the pointer, after all, is the dog for the moors." But yet there can be no doubt that the pointer may be obtained capable of sustaining as much work, and of ranging as widely and as fast, as the setter, if only his feet will stand the heather. On the other hand, there can, also, be no doubt that the setter can be met with fast, and yet steady, and with a nose equal to any emergency.

Now let us consider what is the essential to good sport, without which no great amount of game can be bagged. The answer will be, steadiness and nose. Which breed is the most generally steady, and which has the best nose? I should unhesitatingly reply, the pointer. I have known some steady setters, and some with most excellent noses; but for one steady setter I have known twenty steady pointers. Then, if this, which is the *essential* point, is more readily gained in the pointer than the setter, I should certainly select him, if it is possible to meet with him of sufficient range and courage. Here, I think, is the real solution—is this possible? My answer is—Certainly, it is possible, but not very easy. I have known a vast number of pointers, but I never saw half a dozen which could compare, in these points, with scores of setters which I have seen; but, at the same time, there ought to be no reason why they should not, unless the moor they are to be used on is very thickly clothed with heather, which works in between the toes of the pointer, a part better protected by the hair of the setter's foot. This hair, however, is no protection to the pad; and the coat of the pointer is as rough as that of the foxhound, which has to encounter, and which is quite regardless of, the briars and thorns of the strong coverts in which he has to find his game. Depend upon it, with the above exception, the pointer's foot ought to stand his work as well as the setter's, and will do so, if properly managed.

But there is one cogent reason why the foot does not stand hard work, and why the pointer is so often knocked up. Every one knows that setters are more difficult to break, and more uncertain, than pointers, and consequently, before the 12th of August, the keeper or servant is instructed to give them plenty of work to make them *steady*. But in doing this he hardens the foot, and improves the wind, and, by a natural consequence, he enables them to go through their work in a handsome manner, without betraying fatigue. The poor pointer, on the contrary, suffers from his well-known stanchness, and is allowed to remain in his kennel till he is placed in the train for the purpose of being conveyed to the scene of his future labours; and truly laborious they are to the fat, unexer-

cised, and thick-winded animal; and this not only affects the individual, but his descendants. Wherever hares are coursed they run well, because those bred there must be the sons and daughters of hares stout and fast enough to have saved their lives in former seasons; so it is with all animals—if bred from bad-winded or soft sires and dams, they will exhibit the same peculiarities. But get a good, healthy pointer bitch, keep her in health and condition by constant exercise, put her to a similarly treated dog, and treat the offspring in the same way, and you will have no reason to complain of their want of range or stoutness, unless the breed itself be radically bad.

In the present day (1875) the pointer is bred almost too fine and delicate for the hard work of the north, while he has little left for him to do in the south, where retrievers are the fashion, and walking turnips has superseded hunting stubbles and seeds. Mr. Whitehouse's strain, for instance, is unmatched for any ground not clothed with short heather, and for any climate likely to be met with in England; for Scottish moors his dogs are too fine, in my opinion, and I should select in preference a coarser pointer, or a setter.

Thus far I have written on the pointer, and on his suitability to go through the work on the moors; but having asked if it is possible to obtain the requisites for grouse-shooting in the pointer, I must now make the same inquiry as to the setter. My answer would be, that you may breed some few setters better than any pointers for the moors, but that to obtain two good ones you must breed at least twenty; and you cannot tell, until twelve months old, whether they are likely to be good or not. In the pointer, if you have a good form in the puppy, with good back and legs, and a power of holding himself together in the gallop, you may generally prognosticate that he will be steady, and of good nose; but not so with the setter—he is never to be fully fathomed till well and thoroughly broken, and is seldom to be depended upon till his second season. Many setters have I seen apparently well broken and steady "before and behind," yet a week's or month's rest has rendered them so wild, that it will be some hours, and take some whip-cord, to restore them to a wholesome degree of discipline. They have the advantage of bearing that discipline better than the pointer; and if a shooter is in the habit of venting his ill-humour upon his dog when he fails in his shot, setters are the breed which he should select. They are hardy and good-humoured in the highest degree, and will work after punishment even more readily than before.

Since the introduction of dog shows, the breeding of setters has been vastly encouraged in the south, and this dog, which was when in perfection chiefly confined to the kennels of some few noblemen and gentlemen in the north, has now become common enough. The Gordon setter in particular has been extensively introduced into England, and his beautiful colour and coat have made him a general favourite. According to my experience, this breed is remarkable for good nose and for steadiness, but the dogs are generally somewhat heavy, and do not stand their work so well as smaller and lighter breeds, or as the bitches of their own breed.

Varieties of Pointers and Setters.—The selection of dogs, then, is to be made from the following: first, the old Spanish pointer; second, the modern pointer; third, the setter; fourth, the Russian setter. I have said that the old Spanish is too slow, lumbering, and pottering for grouse, and that the modern dog may be procured of fair lasting and ranging powers, yet with good nose. The setter, I have also remarked, may be obtained sometimes with all the desirable points in perfection, but I have said nothing of the Russian setter. This variety is much more woolly in his coat than the English or Irish, and the quality of the hair is very like that of the Skye terrier. He has generally, a very good nose, is very hardy, but bears heat badly, and constantly wants water. I have, however, known some exceedingly good dogs of this breed. They are very apt to get disease of the skin; and if they do, they are very difficult to cure, on account of the matting of their hair.

Altogether, therefore, I prefer a well-bred pointer for any moor not very full of heather; but I should select one strong and bony in frame, with good loins, and with feet round and *hard*. This last point is very essential: no matter what the shape, if the horny matter on the pad is thin, they will soon wear sore. The toes, also, should not

spread apart, or the skin between will become sore, whether hairy or not. The head should be broad, with well developed nose, and the secretions of that part should make the end moist and soft.

But, it may be said, if the pointer and setter each possesses what the other wants, why not combine the two in one perfect cross? This theory has, however, been carried out with a want of success which too often attends upon that tempting bait—theoretical reasoning. Man's theory is, indeed, so often upset by actual results, that it seems as if his pride must require humbling; and possibly this may be the cause of its frequency. At all events, it is strange that the result of this cross should be exactly the reverse of what was expected. No dog is, generally, so bad as the cross between these two, and they do not even improve one another in any respect, but fall off in all. Why this should be so I know not, but so it is; and I would strongly caution every sportsman against trying this experiment, which has invariably failed, except in some few instances in the first cross, when they take after sire or dam, and do not resemble both.

As I said before, if there is a great deal of heather on the moor, the setter must be selected in preference to the pointer; and among the setters I prefer the Irish, if a great amount of work is required from him, but he cannot be depended on without it.

THE NUMBER OF DOGS REQUIRED for the moors, for each party of shooters, is not less than three brace. If one, two, or three guns work together, they will of course not require more than for one gun. Few dogs will work more than six hours, but a good one should be able to do that; the average, however, will not come up to that mark; and therefore, hunting twelve hours a day, you will require the assistance of a third brace. No good will be done with more than a brace, or, on a wild moor, a brace and a half, at a time, if good rangers; but if you have a pottering dog which will not go far from you, he may as well be at large, and allowed to do what little he can; in my eye, however, he spoils the beauty of the work, as I cannot bear to see one dog much faster than another. The perfection of grouse-shooting, to me, lies in the quartering and exact working of the dogs; yet if you have a steady old dog in the middle, and working between your two fast and wide rangers, they will not cross one another, but will and ought to refuse to encroach upon his beat, and turn upon their own ground when they come up to his. Most extensive grouse-shooters calculate upon a kennel of at least six brace of dogs, which is about the average team. This number will not be too many if they are of the usual run of pointers; but if more carefully selected or bred, or if of a good breed of setters, the number I have named will be more likely to answer your purpose; still it is better to have too many than too few: a cut foot, or any attack of disease, may deprive you of the services of one or two, and you may be left with perhaps one good one, or not even that. If, therefore, you have the means, and cannot fully depend from experience upon all your team, take at least an extra brace, or even two.

It must not be forgotten, that some dogs which have appeared very good indeed when tried without the gun, and worked by their breaker, will not turn out quite as well as you expected from their performances and the characters given by their sellers. Some are not steady enough, others are too steady, &c. An amusing instance is told by Mr. Colquhoun, in his valuable contributions to our knowledge of Highland sports: "A gentleman, walking out with a high-broke pointer, suddenly missed him, when he presently espied him soberly and submissively following the heels of an old guinea-fowl, whose reiterated cry of 'Come back! come back!' he had thought it his duty to obey." If I had seen a dog following a guinea-fowl, I certainly should rather have suspected him of being fowl-mouthed than of being too highly broke; but, as a story, it tells remarkably well. It must be remembered, however, that the scent of the guinea-fowl resembles that of a pheasant, and that if the dog had pointed he might have been forgiven.

SECT. 4.—BREAKING TO THE GUN.

It will be borne in mind that the education of the pointer, or setter, has only been carried up to the point at

which it was compelled to stop, for want of the gun; and that there are some few essentials in regard to which it requires finish. The "Down-charge" is dependent upon the rising of the birds, and can better be taught at pairing-time than now; but, however well inculcated, it is too apt to be forgotten, and to be lost sight of, in the anxiety to bag the game. It will be remembered that I have strongly recommended that the pointer or setter should not be used as a retriever, but that another dog should be specially set apart for that purpose. If this is not the case, the chances are ten to one that the young dog is allowed to go to his bird, if a runner, without waiting for his master's order; and if this is done once or twice, the habit soon increases, till at length both dogs rush in, and tear their bird, in their anxiety to retrieve it. I should always advise that the "gillie" has charge of the dogs at this critical moment, and that *he, as quietly as possible*, but somehow or other, keeps them steadily down; this is all he has to do at that moment, though he may well do that and mark at the same time. He may also lead the retriever till he is steady enough to walk at your heel; but his grand use is to keep the dogs down when the birds rise, and this he should do under all circumstances. Dogs do not require to mouth their game as an encouragement; they are quite satisfied if they see it fall, and will continue the work as long as their strength will allow, without touching a feather. By adhering strictly to this plan, all danger of their acquiring this inexcusable fault is done away with.

The ranging and quartering, of course, have been acquired in the mode I have advised; and the dogs have been accustomed to the sound of a gun. If any one of them is wanting in self-confidence, be particularly careful in following him up; pay great attention to his point, and take great care to shoot his bird, if possible, or at all events, to shoot at it. In this way, he finds that you estimate him higher than he thought, and learns to depend upon his own powers, instead of following another dog and always looking out for "points."

In grouse-shooting, there is not the annoyance of the constant hedges which are so detrimental to the pointer in the pursuit of the partridge; but there is a much greater chance of a dog pottering over a foot-scent, because the grouse runs so much more than the partridge, and, being feathered down the leg, his foot-scent is much more strong. It is here that a good setter shows his superiority, as he generally makes out a foot-scent better than a pointer; though I am bound to say that I have seen pointers that would make out anything. The very highly-bred pointer often has no notion of this; he points as stiff as a Chinese idol the moment he comes upon scent of any kind, and nothing will move him as long as that scent continues. Such dogs are useless on the moors, when you not only want to know that there is game, but also where it is.

The essential feature of a good dog is, that he shall stop the moment he feels the scent, and satisfy himself that game is before him. As soon as he is quite sure of this, he should wait till you are within distance; on being assured of which he should draw upon his birds, if they are running, taking care to stand quite steady if he hear the faintest "Toho" from his master. This is sometimes necessary, if the grouse are strong runners, as the shooter must often head them before they will rise, though, for my own part, I should much prefer walking rapidly up to them, and putting them up, as they will seldom, till they are become very wild, get far enough before you to rise out of shot. Some dogs learn to leave their first point, and go round and circumvent their game; but this is only a rare accomplishment, and is scarcely to be desired; it is much better to send your man well on before them, ordering him to drop to the ground the moment they rise.

Thus much for the management of the dogs. We will consider how the intellect of the man may assist the instinct and superior olfactory power of the lower animal.

Sect. 5.—Management of the Beat.

In this particular, the address of man is conspicuous. It is often said that a good dog knows where to find his game without looking for it; but I have invariably found that, though occasionally successful, such dogs are the worst animals for a whole day,

and leave more game behind than they find; the same may be said of many sportsmen who pick their ground in grouse-shooting. In partridge-shooting, as well as in coursing, much game is left behind by the man who is constantly saying, "Oh, we shall do no good here." The best plan, in the long run, is to get good ranging dogs, with good noses, and beat all before you, taking care to have the wind in your face, unless it is very high and you are on the edge of your ground, as then your birds will be sure to fly down wind in spite of your teeth, and you will lose them, as they seldom return the same day. If there is a high south wind, begin at the south-east or south-west corner, and work up the south side, by which means your dogs will have a side-wind and your birds will fly into the centre of your beat. If, on the contrary, the wind is from the north, begin in like manner at the north-east or north-west corner, and work up the north side.

Under all circumstances, when you come upon game, you should *follow up that covey, till you have either killed all, or lost them.* In pursuing this course, I do not mean that you should take your dogs up while going to the covey first shot at; but, in doing what I advise, hunt the intervening ground, and if you meet with fresh game, you may bag it if you can, as a matter of course. If the second covey should be marked nearer than the first, follow that up in preference; but, as a rule, if both are equally comeatable, stick to your first love. The object of this is twofold—in the first place, you scatter your game, by perseveringly following them up, and thereby have a much better chance of getting single shots; and in the second, you make your whole lot of birds less wild, because you kill off those which are shot at, and leave the undisturbed ones for a future day. It is not the report of the gun alone which frightens birds, but the finding them, and putting them up, and then firing at them, which has that effect. By shooting once a day at every covey, you would get, perhaps, on the average, one and a half birds out of each; say thirty brace a day for three or four days, and twenty brace, or even less, afterwards. This plan would require you to disturb and alarm forty coveys, to enable you to bag one and a half out of each; but thirty brace may be obtained from five or six coveys, if they are followed up and exterminated, leaving thirty-four coveys for the second day, twenty-eight for the third, and twenty-two for the fourth; and all of those that are left would be as readily come at on the fifth, sixth, and seventh days, as on the first. This is very important, in a sport which is generally pursued unintermittingly for a week or ten days at least, with the intervention of Sunday; for most Englishmen, when they hire a moor, are limited in their time, and have nothing else to do to fill up the intermediate days. I need not here observe, that, after a time, the flight of the grouse is often at so great a distance as to forbid the sportsman from following them; but I am, of course, supposing the thing practicable, as it generally is in the early part of the season.

Many men advise that the shooter should begin by driving all the birds towards the centre of the moor, because, by this plan, they are kept away from the adjoining moors, where they may fall a prey to other guns belonging to it. But this is difficult of accomplishment; grouse will not be driven like sheep, and will make their point, let it be where it may. In making such an attempt, therefore, you are as likely, or nearly so, to drive them off your beat as farther on, and, by so doing, spoil your sport instead of improving it; if, however, you leave thirty-two coveys out of forty quiet, they are safe from your neighbours, even though they beat to within a hundred yards of the place where your undisturbed grouse are. The shooter should always begin on the edge of his moor, selecting the lee side, and then work his way towards the centre, following up his birds in such a way, if possible, as to keep them on his own ground. This plan, however, will not answer if the wind is very high, as already mentioned—in which case he must begin on the windward side; he will thus do less harm, in point of making them wild, and will get more shots than in any other way. If the birds approach the boundary, they must either be left alone, or the shooter must drive them back, trusting to his dogs to get the wind in their work; this they will do readily, because, as they cross the wind,

it is of very little consequence to them in the greater part of their range. In beating the side of a circular mound, such as you constantly see on the moors in Yorkshire, you may almost always reckon upon the covey you shoot at keeping to the sides of that hill; they will fly round and round, dropping always on the other side to you, and, by following them up, you may break them, and frequently bag every one. When on the feed, grouse seldom rise all together, but generally leave one, two, or more behind; these should be diligently sought for, and brought to bag. There are many parts of even the best moors which are not "lucky for grouse," as the shepherds say; that is, the heather is not just of the kind they like as to growth. Their most certain finds are those parts which are patchy, with the heather leaving the turf peeping though here and there. It is not in the very thick unbroken heather that they delight, but in those spots where they can sun themselves, or use their legs in running in the grass; but the best plan is to make yourself acquainted with their haunts, or to take some man with you who has that knowledge; though, after all, it is a lottery, the ground which they most frequent one year being deserted by them the next. If the shepherds are made friendly by a proper *douceur* (without which it is useless to expect their co-operation), they will always enlighten you as to the best spots for grouse. Let not the grouse-shooter hope to do without these gentry; they have everything in their power, and can make or mar his sport as they please. On every account, therefore, keep the blind side of them; and even if they quarrel with your keepers, take care they do not quarrel with you. Fresh-burnt heather it is useless to beat; though this is the only rule which can be laid down, as in every other situation grouse are occasionally found. If the season is very dry, the near proximity to water is sure to afford a good chance of finding game; and, on the contrary, if wet, the hill side, or even the top, is the most likely place. In grouse-shooting, more is to be done by early work than in partridge-shooting; but even here, since nature has her limits, it is better to wait till eight o'clock. At this time of the year the evenings are quite light till eight o'clock, and twelve hours a day are surely enough for the greatest glutton that ever shot. By "throwing off," therefore, at eight, and getting a good breakfast before starting, there will only be luncheon to provide on the moor; consequently, eleven hours at the least may be devoted to the sport, and the strength is reserved for the best part of the day, viz., the evening, when the birds are coming off the feed, gorged and lazy. The young and inexperienced hand should be on his guard against the "dodges" of the old birds, especially the cock; he will often endeavour to lead both dog and master away from the rest of the covey; but both, after a time, become initiated into his artful manœuvres, and leave him alone, unless the chance occurs of bagging him, which should be seized with avidity. Towards the end of September the young birds have learnt to run as well as the old ones, and will often be seen to run out of shot, and then get up perhaps three hundred yards ahead. If they are seen running, the "gillie" may generally get beyond them, and stop them. At this time, a long and heavy single gun is the only one likely to do execution, and No. 3 or 4 shot may be used with advantage; indeed, after the first week, the second barrel of your ordinary gun should either be choke bored or it should be loaded with one of Lancaster's Concentrators (page 54).

Sect. 6.—Grouse-Driving and Stalking.

When grouse become very wild two modes are sometimes adopted of getting shots, namely, driving and stalking.

Driving Grouse consists in forcing, by means of the gillies, the grouse over or within shot of certain spots where the shooters are concealed. In those moors where walls are met with, one of these places of concealment is selected, and the sportsmen crouch down behind, at intervals of sixty yards from one another, and in such likely situations as it is supposed the grouse will fly over when disturbed on the opposite hill. The gillies then take some good ranging dogs, and having found the grouse, they get beyond them, and drive them up in such a manner as to insure, as much as possible, their taking the direction of the concealed sportsmen. Where walls are not available, huts are

constructed and clothed with heather, leaving an opening for the gun; and these are better than walls. Within the last few years this method of shooting grouse has been extensively patronised, and it appears that by adopting it a larger head of game is maintained, as the old birds are more generally killed than in open beating, where the young ones are far more likely to fall to the ground.

STALKING is practised by the shooter himself, by means of the telescope, and is a very laborious pursuit, if the result be compared with the outlay of time and labour, especially if these are increased by the weight of the game-bag. It is conducted on exactly the same principles as deer-stalking, though on a smaller scale; and the reader may consult the chapter on that kind of sport for the details of the various plans and manœuvres which are then called into operation, and which will be equally successful in stalking grouse.

SECT. 7.—THE RETRIEVER.

Upon the point of using a separate retriever, or allowing one of your pointers or setters to retrieve, there is a great difference of opinion among sportsmen. I have already given my own opinion, that the use of a separate one is the better plan by far; and have given my reasons for this opinion, and also for selecting a small dog in preference to a large one. In this opinion I am supported by that good sportsman, Mr. Colquhoun, though he is not restrictive as to size or breed. On the other hand, General Hutchinson says, "We all have our prejudices—every Englishman has a right to many; one of mine is, to think a *regular* retriever positively not worth his keep for general shooting *if one of your setting dogs will retrieve well.* However, if you shoot much in cover, I admit that a regular retriever, which can be worked in perfect silence, never refusing to come in when he is merely signalled to, or if out of sight softly whistled to, is very useful, particularly where you employ beaters; but even then he should not be the idle rascal one generally sees; he should be broken in to hunt close to you, and give you the same service as a mute spaniel. I grant this is somewhat difficult to accomplish, but it can be effected; I have seen it, and, being practicable, it is at least worth trying; for if you succeed, you make one dog perform the work of two, and if he accompany you in your every-day shooting, you will thus obtain, in the course of a season, many a shot which your other dogs, especially in hot weather, would pass over. If, too, the retriever hunts quite close to you, he can in no way annoy his companions, or interfere with them; for I take it for granted he will be so obedient as to come in to heel the instant he gets your signal." This opinion, on the face of the passage, certainly would appear to be prejudiced; for I can scarcely understand how a dog which he admits is very useful can be "not worth his keep." I am fully aware that pointers and setters may be made to be steady to "Down charge," and yet retrieve; but I know from experience, that in nine cases out of ten those which are unaccompanied by a retriever are so unsteady that few men are fit to exercise the necessary controlling power. If only once or twice in a day a bird is winged, and the setter is enjoined or even permitted to retrieve before the gun is loaded, there is an end to all "Down charge," and every time a bird is shot it is retrieved almost before it touches the ground. If, however, the shooter *and his friends* can command themselves when "the bag" is endangered, one of the setters or pointers may be entrusted with the task. If, on the other hand, it is decided to follow the present fashion, and keep a regulation "retriever proper," of the recognised pattern—that is to say, a cross between the Newfoundland and the Irish spaniel—the following directions of my friend "Idstone" may be implicitly followed:—

"The retriever of the present day must be black. He must have no white toes, no white tip to his tail, and as little on the chest as possible. His coat should be shaggy and shining, straight or slightly waved. He should have a long pair of jaws, a long body, a long neck, short legs, small ears close to his head, a deep but not wide chest, a bushy tail gaily carried, large sensible eyes, deep ribs, and large but compact feet. His toes must not turn *out*, his hocks must not turn *in;* and he must be neither shy nor nervous, even at six weeks old. There are various breeds, but this is the dog I

prefer, after some experience of all varieties. Curly dogs require great care, or their coats become dead and lank. They have also a rancid smell, and cannot readily crash through briars and underwood. Liver-coloured dogs, like the Irish spaniel, are not sufficiently conspicuous amongst fern in autumn, or the leaves of beech-trees; and the shaggy Russian gets felted into knots and tangles, which defy all attempts to make him presentable even at a covert side, and prevent his working in it.

"The retriever is a comparatively modern invention. Our forefathers made their old Spanish pointer or setter retrieve, and for water-fowl they adopted the spaniel, which old engravings show doing more harm than good. Doubtless a dog kept for retrieving, and occasionally beating a hedgerow (and a retriever ought to be trusted so far), will recover far more game than any pointer or setter which is allowed to fetch; nor can the setting dog be permitted to get up from the down charge and road a winged bird, without risking his future steadiness to gun or wing. It is much better to see the pointers 'down close' whilst the retriever works out the puzzle, comes back and takes his place behind his master, and the pointers get up to signal and range again.

"How crippled game was recovered fifty years ago I can't say; but thirty years ago I have been out with first-rate sportsmen who used none, and at most had a bit of a spaniel in a string to lead them up to, or fumble the game when killed or wounded. I am inclined to think that the keeper's 'general dog' gave us the first hint that a black 'Newfoundlander' might be made useful, and by degrees he was broken in to his present pitch of excellence. It is extraordinary what a quantity of game a keeper will bring to bag with an intelligent companion of this description, and how handy he will make him. If he has taught his dog to hunt *on the opposite side of the hedge*, to keep within range, and to down charge or stay behind at the wave of the hand, he is master of the situation, and nothing can escape him. The dog beats him in nose, and equals him in all else except knocking down the bird. But then it is not every keeper who can bring out these faculties, though every under-keeper *ought* to be able to break a dog to this pitch of excellence.

"A good deal depends upon the pupil. Some young dogs *will* be good, in spite of all errors in breaking; some require very careful handling; and many are not worth keeping. A breaker will do best with a whelp which he has obtained young, say six weeks or two months old; he can form some notion of the dog's intelligence from its eye, and of its courage by the way in which it treats any sudden noise as he looks over the litter in the kennel.

At this age it cannot be determined whether the puppy has a soft mouth or not; that must remain a mystery until he is large enough to bring a young rabbit or a bird. If he bites it, a bit of chain fastened in his mouth behind the grinders *may* cure him of the habit; but in a dog of six months old such a propensity is incurable, and very few dogs are worth working with the retriever bit, which will be described in its proper place.

"Don't choose a 'lynx-eyed' one, a nervous one, or a dog with a small head; but, on the contrary, select that which has a head disproportionately large; and avoid those which curl the tail upwards until it turns over the back—they are apt to be 'ring-tailed,' which detracts from their value. Besides the large head, he must have legs like arrows, and a good loin.

"Children should not be permitted to play with him—above all things, not to send for things, either soft or hard. He should be used by one master, and neither corrected nor fondled by anyone else. He will be all the better for being secluded and accustomed to the whistle when fed. *Coming to whistle* is one of the very first lessons he has to learn; and at a very early age a bit of bread or meat may be thrown for him in the grass, where he can find it by nose, and not by sight. It won't do to persevere in this after he is about two months old. Then he may be taught to bring a soft ball, or rabbit-skin tied up tightly, and trailed in the grass for him to find on a good scenting evening. Short lessons, often repeated, give him a zest for retrieving, and the task should be associated in his mind with liberty.

"All this time he should be accus-

tomed to the report of the gun, not fired close to him, but at some distance, whilst he is observed by some one close at hand. Better still if some other person fires the gun, and his breaker is at hand to reassure him if he is alarmed. Many dogs, especially retrievers, show no fear of loud noises, and all trouble is spared those who break them in that respect; but now and then the whelp is some weeks before he becomes reconciled to gunpowder, and occasionally this dread renders him unsuitable for his calling.

"A decided disinclination to carry or fetch is often a hard thing to overcome, and beyond a certain point it is useless to persevere. Throwing an object a short distance, running from him when he stoops to it, and whistling him back—these are the only means of inducing him to bring.

"Never whistle to him except in a low key; never shout to him, or speak to him except in a subdued voice; and accustom him to the same words and signals—*never alter them under any circumstances.* If he won't come to the whistle, let some one 'put him to you,' gently but firmly. On all occasions except this, work him and use him undisturbed by the presence of other dogs or men. If at a critical part of his education you see some curious farmer or shepherd strolling towards you with his sheep-dog or rat-terrier, take your dog up and discontinue until you are alone again.

"Give every lesson quietly and deliberately, but never yield a point unless you see the dog is wearied or disgusted. When this is the case you have a hint that you should have left off before. Always remonstrate with a dog, even if you don't punish, and impress your words upon him carefully. A flip of the finger is a good signal for a dog to hunt on, and a wave of the hand to turn right or left. The hand raised will signal him to down charge, and check him if he is tempted to break away. He will be often subject to this temptation—say, if a hare jumps up as he roads a winged bird—and then the benefit of the down charge is manifest.

"The only words a retriever needs to learn are 'Down!' or 'Lie down!' 'Hi, lost!' 'Come behind!' 'Get over there!' and 'Steady!'

"At three or four months old he may follow his master for short journeys over the manor, but will require careful watching as he passes or meets vehicles of any description—the drivers of agricultural wains seeming to delight in trundling their wheels or rollers over any inexperienced dog.

"You can at once teach him the down charge, and also to wait wherever you leave him. To down charge a puppy you have but to take a short line and peg. The line may be about 10 ft. long, but where it joins the collar there should be 2 ft. of light strong chain. Fix the peg securely in the ground, and fasten the line to it. Put the dog down, saying in a firm voice, 'Down, Pilot!' supposing that to be his name. He is sure to get up to follow you. Drag him back without temper or violence, yet resolutely, if necessary, fifty times. Persevere in the same spot for about twenty minutes, retiring from him with your eyes upon him and your hand upraised.

"By and by you can perhaps get from him 100 or 200 yards; at any rate, continue the lesson until you can do it, or until you can even run from him or run to him. Reward him with a bit of meat or biscuit if he does well; and, if his temper permits a *slight* stripe—a very slight one—you may give it him if he rebels; but recollect that if you ever *overdo* the punishment you will repent it. Fifty light floggings are more beneficial than one severe one.

"Keep repeating this lesson from time to time, especially if you flush a pheasant or spring a hare. In these cases let your voice and manner be most impressive. On the dog's implicit obedience under such provocation much of your pleasure in using him, and your progress in making him, depend.

"During the whole preliminary course he should carry about four yards of line. Young dogs are fond of playing with their game, and are not easily recovered without a string. They, in fact, want to play with *you.* Peg him constantly now with this length, and loose a ferreted rabbit close to him several times a week. Down charge him every time, and he will learn to drop when he finds one in a hedge. A dog that has never been allowed to chase is very easily broken; one that has acquired a zest for it will always long to start, however well he may be controlled.

"*Waiting* is taught also with the peg; but the dog should be fastened where he cannot get entangled, or he may hang himself. Waiting is, in fact, an extended down charge, and it is important that the rope should be secured by 2 ft. of chain to the collar, otherwise, when left to himself, he will bite through it. Should he get loose and follow you, it will be some time before he forgets it, and he will perhaps try the same expedient for weeks and months.

"As he gets accustomed to be left, use a smaller and still smaller line until you can leave him pretty safely without one. Repeatedly try if he will let you run *from* him, and, if so, reward, but keep him down with his nose between his feet. Then run *at* him as before, rewarding him for doing well, and using no further punishment than the dragging back if he contradicts you. On this depends all the dog's future as to steadiness; and after a few such lessons you may let a young rabbit go from his nose and see if he will chase. If so, pull him back again until he is steady.

"In a week you may let a rabbit go from your hands and shoot it. If he breaks away to fetch it, you have him at your mercy, as he is pegged, and you can go over the same course, with a slight cut added to your remonstrances. Always run *from* him when he reaches his game; and if he does not return at once, send a boy round him to cautiously turn him to you. Get him to carry it alongside of you as far as he will without effort or weariness, and take a convenient opportunity of getting hold of him. Then *open his mouth*—don't drag game from him—and after caressing him reward him as before.

"I have used for finishing lessons in waiting a catgut line (the first string of a fiddle), with a thin wire to fasten it to the collar; and when I find the dog quiet and still on my return, I trust him for a short time with no fastening, but it must be from some post of observation where I can watch his movements unobserved. It is always well to leave him in charge of some trifle, as it gives him consequence; but it will be some time before he can be permitted to guard game or eatables.

"During all this preliminary training, gain his confidence and affection; and if flogging is required (it generally does more harm than good), *you* expostulate, and let the blows fall from another hand.

"I have named some of the aids to breaking; as he gets older he may require others. These are the weighted collar, the spike collar, or check collar, or even the retriever bit. All of these are preventives to evil, not punishments. If a young dog is kept from doing wrong from the first, he will require to feel very little of the thong. Much of his 'breaking,' as it is called, has been accomplished when the master has gained the confidence of the pupil—above all, when he has won his heart. During all his pupilage keep a dog shut up, or even chained, except when he goes out for his daily task, and let the master, *and no one else*, give him his liberty. A dog has more love for the man that unchains him than the hand that feeds him. Confinement also keeps him *brisk* during the months he is growing and feels the lassitude of youth. If he runs loose all day, he will not care to leave home, and will be more solicitous for scraps at the door than game abroad.

"Retriever-breaking may be commenced at any time of the year; but the young dog's work should be of such a nature that he is always under your eye. He must be kept out of covert until you have considerable experience of his character, or he may spoil the sport of a whole party, and, frantic with excitement, regard neither signal nor whistle.

"Many gamekeepers expect too much of a dog. They forget that he has to learn *by the constant repetition of lessons*, and that one blunder of the breaker's, such as may be caused by anxiety to *secure a cripple anyhow*, will confuse a dog's mind for months. Short lessons and often—that is one secret; constant companionship—that is another; and you may add to this 'dog language,' and what an old keeper called 'affability,' with a dog. 'He don't,' said the old keeper, pointing to his under-man, who had a grand young retriever with him, 'he don't treat him with affability. It's "come here," and "go there," as if he was a-speaking to a dog instead of a *Christian!*'

"It must not only be short lessons and often, but *slight punishments repeated*. Once overdo a punishment, and the dog either hates you for ever or

throws up his work. It then becomes a matter of coaxing and inducement, and the dog is sure to have the best of it. Directly a dog refuses to work, take him home, and keep him on the chain till liberty and work are a treat to him. When this time has arrived he will let you know it, by his speaking eye and that dog pantomime which is akin to eloquence."

If a retriever has, naturally or by bad usage, a hard mouth, he should be rejected; for it is a fault very difficult to eradicate, and shows a degree of impetuosity and bloody-mindedness unfitting him for his vocation.

It is almost needless to say that retrievers should be strictly kept from vermin-killing; the mildest dog will turn upon a rat, if caught by the lip; and the bite of the polecat or stoat is still more severe. Nothing is more clear than the propriety of keeping each kind of dog to his proper sphere of action. Each requires different temper and faculties; and the brain and nose which are adapted for the retriever would be thoroughly out of place in the greyhound; but by making use of these several powers in their proper places, man is enabled to obtain, in the highest degree, a helpmate in all his sporting propensities—though not the same animal for all purposes. Division of labour is known to favour high excellence in man; and the same rule applies to his assistant—the dog.

Sect. 8.—Shooting-Pony.

For grouse-shooting, the pony is only required (except for the lazy and infirm) to take the shooter to the moor; once there he can scarcely avail himself of its assistance without sacrificing his sport. During the time in which a man is dismounting, the grouse are getting on the run, and the interval, short as it is, will very often enable them to rise out of shot. Few active men try the experiment, but I fancy if they did, they would find they could kill more birds with than without a pony on moors where there are not many bogs. With his aid you may get up to the birds much more quickly; and I do not think the noise made by the canter of the pony occasions any disturbance to them. No doubt the increased height is a disadvantage, but, to balance this, is the increased speed of getting to your dog's point. How often do we see the pointer stand at 150 or 200 yards off, and what a time it takes to get up to him, especially if against the steep side of a hill; on the other hand, many parts of the moors are not rideable. In making the comparison, it is generally the case that the shooter on foot is an active young man, and the pony-man an old and infirm one, who takes five minutes to get off, and perhaps rides up as slowly as the other walks. Still, I should never advise any good walker to adopt the use of the pony; but, at the same time, on many moors, I fully believe an active, wary man may, if he likes, use one with advantage, and especially when birds are running much. The pony only requires to be broken to stand the gun; to leap in hand, or follow over a ditch or fence; and to be handy, and used to stand without holding. This is so easily taught, that it is unnecessary to allude to it here.

Sect. 9.—Expenses of Moors.

The following estimate of the expenses attending upon the sport is, I believe, about the average. In some cases, shootings are let at so much per gun, varying from 10*l.* to 50*l.* per month. It is seldom, however, that good shooting can be procured in this way; for, as the letters have all the expense of preserving, &c., they seldom perform their part of the contract fully. It is better, therefore, for one person to undertake the moor, and to divide the whole expenses of it with one or more companions.

COST OF A MONTH'S GROUSE-SHOOTING.

	£	*s.*	*d.*
Rent of moor, per year .	300	0	0
Two keepers, one 24*s.*, one 12*s*	93	12	0
Douceurs to shepherds . .	8	0	0
Keep of 7 dogs, at 12*s.* per week	31	4	0
(These are also available for partridge.)			
Fare to moor and back of two guns and one man, with dogs, taking the centre of England as a starting-place, and the centre of the moors to go to—about . .	15	0	0
	£447	16	0

Living at moors not charged.

I have calculated this for two guns; but more frequently the moor is divided among three or four. Such a one as would let for 300*l.* will scarcely supply game enough for more than two guns, if pretty good shots and ardent in pursuit of sport. Some few shillings a week may be saved in the wages of the keeper, but I am persuaded that economy here is badly invested. A *really good* keeper is worth the sum I have named, in the Scotch or Yorkshire market; and he is so difficult to get, that I would rather give less for the moor and more for the man than adopt the other alternative. Between a good man and a middling one there is a difference of at least 50 per cent. in the quantity of game; and, in mere money-value, this will make up five times the difference between a pound a week and 24*s.* My advice, therefore, is to get a first-rate gamekeeper at any price; as good a moor as can be procured at your own price; and as good dogs as you can breed or purchase, breaking them carefully yourself —so shall you enjoy all the pleasures and delights which this exhilarating sport is capable of affording.

CHAPTER V.

PARTRIDGE-SHOOTING.

Sect. 1.—Varieties of the Partridge.

This sport, though it closely resembles grouse-shooting in its general features, especially in wild and unpreserved districts, yet differs in many particulars, which will be presently described.

The common partridge (*Perdix cinerea*) is the prevalent species, though the red-legged kind (*Perdix rubra*) is frequently met with in England; the latter is, however, so destructive to all sport, from its tendency to run before the dogs, and also so dry and insipid in flavour, that it is exterminated wherever this can be effected. Partridges lay from twelve to twenty eggs, commence sitting early in June, sit twenty-one days, and hatch, on the average, about the 25th.

The Common Partridge is too well known by appearance to need description. It is found nearly all over England, and in Scotland and Ireland, wherever there is inclosed land. In

some counties, as, for instance, in Norfolk and Suffolk, it is so generally preserved as to be quite the pride of the locality, a good day's shooting being there considered the *beau idéal* of country pleasure. Nevertheless, I never could see this beauty in Norfolk shooting; the birds are so tame and so plentiful, that nothing is required but the very moderate use of the legs and a good command over the gun; dogs are altogether at a discount, and are scarcely thought necessary to the sport, except for retrieving and driving the stubbles. In my opinion, the expectation of true sport in partridge-shooting is now for ever defeated, in consequence of the improved system of agriculture almost everywhere adopted. Formerly, in every farm, during the month of September, nearly one quarter was left with good (*foul*) stubbles, at least eight or ten inches high. Here there was as good cover as in turnips, or nearly so, and with the advantage that dogs were capable of finding their game without risk of running them up. Another very considerable proportion was left in rough fallow, undisturbed by the scuffle; and still another useful cover was met with in the shape of rough grass. But *nous avons changé tout cela:* the stubbles are now all "bagged," or mown, or machine-reaped, as bare as the back of your hand; the old stale fallow is no more; and the farm is so well stocked that in September no old feg containing grass seeds is to be met with. Thus, however desirous we may be of finding our birds on the stubbles or fallows, we cannot succeed, for want of cover in the one and from the non-existence of the other. Besides, the science of farming is now carried to such a pitch, that no sooner is the corn off the ground than the plough is set to work; and, therefore, we often find our best stubbles, at the time of partridge-shooting, disturbed by three or four teams of horses with their attendant men, or, what is still worse, by the steam plough. No wonder, therefore, that the sportsman leaves the South, and betakes himself to a country equally full of game of even a superior quality to the partridge, and allowing the full beauties of the pointer and setter to be developed. There is, however, no more difficulty in preserving a good head of partridges now than there used to be; the increase of turnips and other green tops has more than counterbalanced the loss of the stubbles, if the mere facility of rearing and killing game only is considered; but to kill any number of partridges in the old style, with a brace of dogs finding them, is now out of the question. We often hear of more than 100 brace falling to one gun in one day; but how is this done? By using a lot of men to drive all the stubbles, and thus collecting the birds on a given number of acres of turnips, mangolds, or seed-clover, or some other green crop affording good lying for them. This is similar to the *battue* in principle, and, I think, more worthy of the butcher than the true sportsman. It is, in fact, the same spirit which leads to the use of the bagged fox or the trapped hare, though not, perhaps, quite so bad as those unmitigated Cockney tricks. It appears, to my limited capacity, that pigeon-trap shooting is quite as good a sport as this turnip-butchery, and it may be had much more easily, and at less expense; but, as General Hutchinson says, "every Englishman must have his prejudices;" and whether this of mine is founded in truth or not is scarcely for me to say.

The Red-legged Partridge, which is a species quite distinct from that just alluded to, and is even placed by some naturalists in a separate genus, is larger than the common bird; the bill, iris, and legs are of a bright vermilion; the back and top of the head are of a reddish-brown, approaching to a slate colour on the forehead and sides of the body; and of a pale ash colour on the breast and belly; the chin and throat are white, mottled with black; and there is a band of white over the eye. Various bars occur on the quill-feathers, of brown and grey, giving the bird a very party-coloured appearance. It is not so thick and plump as the common partridge, and differs in its habits. It is abundant on the Continent of Europe, and has been found as far off as Japan. It is more inclined to run than fly, and for that reason is a pest to the shooter, giving rise to unsteadiness in the dogs, and rarely leading to a good day's sport. It also often, by associating with the common partridge, teaches that bird its own bad manners. Unlike the common partridge, it perches on hedges and trees, but not

so commonly as the pheasant, and always roosts on the ground. It was largely introduced into Suffolk in the last century on account of its hardihood and tendency to increase; but it runs too much even for the modern "walking-up" system, and is only now encouraged by those who confine their sport to "driving," for which purpose the "red-leg" is better adapted than the grey partridge.

Sect. 2.—Best kind of Dogs for Partridge-shooting.

In grouse-shooting I have remarked that a wide ranger is essential to success, but it is generally supposed that the opposite to this is the case in partridge-shooting. There can be no doubt that, where partridges are very plentiful, you only want a steady old pointer—indeed, a mute spaniel, which will not range more than twenty yards from the gun, is often preferred, because, from the delicacy of his nose, he will leave nothing behind; but in wild, open districts, where you have to beat 100 acres before you see a feather, these pottering pointers will no more avail than on the moors. Here a grouse-dog is serviceable, but *he must not draw on his birds till ordered*, as partridges will seldom lie if the dog is not a perfect automaton; at the same time, a dog ought to draw on his birds when ordered to "Hold up," or "Hie on," or you may often be misled as to their exact locality. I know nothing more provoking than to walk up to a point, and, in spite of all encouragement to the dog, to be unable to make out where your game is. I have often seen this with very highly-bred dogs; they seem to be unable to move a muscle, but stand as if carved in marble; and just when you have taken a circle, in the hope of finding the object of your search, the covey gets up fifty yards to the left or right of you. It is in this that the setter displays a marked superiority, as that dog almost always stands with his head to his game, and "draws" with great certainty, either by "foot" or "body" scent. This point, with me, covers a multitude of sins; and I would always reject a dog which stood in the idiotic way above mentioned. But, as many pointers are capable of drawing, I would by no means charge the whole breed with this sin; and, for partridge-shooting, on the whole, I much prefer them to their more handsome rivals, especially in the hot days of September.

Sect. 3.—Number of Dogs Required

In this respect, partridge-shooting contrasts very favourably with grouse-shooting, in which I have shown that three brace of dogs at least must be provided; here, however, half the number will suffice, and, indeed, one good dog will serve very well for the use of many people. Let it be remembered, that this sport is seldom followed for days together, as is the case on the moors. Those who indulge in it are generally near at home, and carry the gun perhaps only once or twice a week, which is quite as often as the birds will allow without becoming wild; the man, therefore, who has a large kennel, can scarcely keep them steady, and is not nearly so well off as he is who contents himself with a brace of stanch pointers or setters. This is especially true of the latter dog, which must be kept constantly at work, to be serviceable; but for the man who hunts one dog only, or even a brace, if he uses them three or four times a week, the setter is very useful, as he is so much more hardy than the pointer, and a better feeder also; the great mistake is the want of work before and after the season begins—the former, to get the dogs steady, yet fit to work; the latter, to keep them so. In great heat setters require much water, and on that account are beaten by pointers, besides which, even with it, they suffer greatly from the length of their coats.

Sect. 4.—Retrieving, Dress, &c.

Retrieving partridges is to be conducted exactly the same as for grouse.

Dress.—This also should be the same as for grouse-shooting.

Sect. 5.—Management of the Beat.

Colonel Hawker was, I think, the first writer who drew attention to the great disadvantage of beginning to search for partridges before the dew is off the ground; it is, however, so important a

caution, that I am much surprised that it was not before his time generally acted upon, and also, that even now many experienced shots dispute the opinion; these, however, are the exceptions, as the Colonel's suggestion is now generally followed. His rules are so concise, and, at the same time, so sound, that I shall make an extract from them, being the summary of the requisites for successful partridge-shooting, viz.:—"*First*, to have good markers, judiciously placed, and *then* to disperse the birds; the best way to do which is to head the birds, by making an extensive *circle*. The second is, to make no more noise than what cannot absolutely be avoided, by doing as *much by signal* and whistling, and as little by *hallooing*, as possible. Thirdly, go on the hills to find, and drive down from them, the birds; and then in vales to kill them. Fourthly, when distressed for partridges, in a scarce country at the end of the season, take a horse, and gallop from one *turnip-field* to another, instead of regularly slaving after inaccessible coveys." —p. 165, 7*th edition*. He also adds, in a note, the following advice as to marking: "Always be sure to tell a young marker that he must *carry his eye well forward* when a covey of birds begin to skim in their flight; and consider that, as they may continue doing so for a field or two, he cannot safely say that he *has marked them down* till he has seen them stop and *flap their wings*, which all game must do before they can alight on the ground."

Preserved Turnip-Land.—I shall now proceed to describe the usual mode of conducting the sport in the highly-preserved turnip-districts. At nine o'clock in the morning—for if begun earlier the birds will return to their feed—the whole of the stubbles are beaten by men and spaniels, in such a direction as to drive all the birds into certain large fields of turnips, clover, mangold-wurzel, or potatoes; all of which afford good cover. Two or three ponies are very serviceable, since they may be rapidly ridden over the ground, and thus may serve to prevent the birds from taking a wrong direction; besides, as the whole ground must be beaten between nine and half-past ten or eleven o'clock, it requires the speed of the horse, or else a great number of beaters, to go over it. By the time last mentioned, we will suppose all the birds driven into the largest fields affording the above cover for them; then the party of shooters form a line at one side of the field, and having a man at the end of every ten yards, and the guns at intervals of forty, they proceed to "walk the turnips." Being accompanied by the keepers and a retriever or two, any wounded bird is expected to be retrieved; but many escape, since the scent of the turnips is so very prejudicial to the perfect use of the dog's nose. In walking straight across the field, it is divided by imaginary lines, which commence midway between each two guns, and run forward at right angles to the line of shooters, each of whom is allowed to shoot only at those birds which are actually within the lines on each side of himself; and all birds killed in that space are said to fall to his gun, even if really killed by an adjoining one. This rule is laid down to prevent two or more shooting at the same bird, and also to set at rest the conflicting claims which any one or more may set up to a superiority in shooting. It is a very useful rule, and should in all cases be rigidly adhered to, not only with partridges, but also in grouse-shooting. It is only when both barrels have been discharged unsuccessfully that a man's next neighbour has the privilege of "wiping his eye," if he can. From the immense numbers of birds which are often driven into turnips, the shooting is "fast and furious," and requires the breech-loader of necessity, as without it the whole line have to wait while the gun is reloaded in the old-fashioned way. It is no uncommon occurrence to find from 70 to 100 brace in one large field; and, early in the season, three-fourths of these may be shot at, since they lie like stones, and get up singly, or two or three at a time only, which, among a party of four or five, are soon disposed of. At every shot, the whole line wait either till the shooter has reloaded or changed his gun—which his servant, in the latter case, loads for him, ready for the next shot. In this way, the whole of the turnips, clover, &c., is closely beaten, and sometimes a second time over with as good success as the first, for, as dogs are not used, and the birds lie close, it is usually the case that one quarter of them are

not put up the first time. Those which escape the formidable line are carefully marked down, and followed up afterwards, when the numbers are reduced elsewhere. In this kind of shooting, however, it is scarcely desirable to follow up broken coveys, since they all lie very well in the good cover which green crops afford; and the birds are so numerous as to keep the guns constantly going for four or five hours, which is the usual term of this sport, for the birds leave the shelter of the turnips in the afternoon, and go on the feed again, when they are not to be slaughtered without more trouble than the Norfolk sportsman thinks they deserve. Such is the fashionable and modern style of partridge-shooting. It has many variations, of course, which depend upon the quantity of birds and the size of the fields of turnips, &c.; and it is chiefly to be met with in perfection in those districts where turnip-husbandry is fully carried out; and these, being generally of a light sandy soil, are peculiarly suited to the habits of the partridge.

The Wheat-Lands.—Until very lately, exceedingly good partridge-shooting was often met with in the wheat districts, even on the strong clays; but the wheat is now so very generally "bagged," mown, or machine-reaped, that the lying for them is gone, and consequently, by the second or third week in September the birds are off the moment the shooter enters each field. It is here that judgment is required, and that good dogs are so serviceable; for it is a singular fact that birds will often lie after they are found by a steady dog, although without him they would get up 200 yards distant from the gun. In the early part of the season, in these bare stubbles, the birds may be found, when in any numbers, by one steady dog, which should beat only about forty yards to the right and left of the gun. After the second week, however, it is generally necessary to permit a wider range, because by that time the game has become more scarce and wild, and to find any number the sportsman's legs would be too severely taxed for the power of most people. If a very steady brace of tolerably fast and wide-ranging dogs are now used, the sport may be enjoyed to great perfection; but the dogs must be very well broken, must never be inclined to "foot" or "road" the birds till ordered, and must be very steady behind. The plan is to send them off into the far end of the field, ordering each off up the hedge side, and then letting them beat back towards you; or otherwise sending them round *outside* the hedge, with a marker, and letting him loose them at the other end. This is the better plan of the two, as the passage of the dogs under the hedge alarms the birds often so as to prevent their lying. In well broken dogs, accustomed to beat towards the gun as well as from it, the whole field is then sytematically hunted, the sportsman remaining where he first entered, and having his back to the wind. When either dog finds, the other, of course, backs, and they both remain firm on their "point" and "back." The shooter readily detects the "pointing dog," and walks straight up to him, or, rather, to his birds—and it will be found that in many cases very wild birds will allow him to come up and get "a right and left." This arises from their being inclined to lie close, with their heads down, as soon as the dog approaches on their scent. If the dog holds his head high, and stops steadily the moment he catches the body-scent, it is highly probable that they will neither run nor rise, but, watching the dog intently, will allow the sportsman himself to come up in the opposite direction.

Mixed Farms.—Hitherto we have been considering the two extremes of partridge-shooting—viz., the turnip-shooting without wheat stubbles, and the wheat stubbles without turnips; but there is also a mixed country, consisting of the great majority of farming districts, and composed of stubbles and green crops intermixed, but without the large fields of turnips found in the light soils of Norfolk, Suffolk, &c. Here we have, perhaps, four or five hundred acres in wheat and barley stubbles, with a few acres here and there of turnips or potatoes, and now and then a field of good feggy grass, &c. If in such a district as this, the birds are pretty well preserved, and are not continually being persecuted, good shooting may still be obtained. The following precautions will perhaps enable any sportsman who has the privilege of shooting over one or two

thousand acres of this mixed land, to proceed in such a way as to obtain good sport. In the first place, he should carefully abstain from shooting till all the corn on his own beat is cut, and also that on adjacent beats, if he thinks the owners of them likely to leave them quiet. Standing corn is such a harbour for birds, that you can do nothing with your own but frighten them away; and if your neighbours blaze away at theirs, they will only contribute to fill your fields with game. Wait, then, till all your own corn is cut, and then begin throwing off some fine morning, as soon *as the dew is off*. First, beat for birds in the stubbles, taking care to have very steady dogs, and to give them the wind. As soon as a covey is found, endeavour to drive them up, by walking to them from a quarter at right angles with your dog's point, so that they shall not go straight away from you, but pass you, and give you a chance to fire both barrels—which you will do, if possible, at the *first two birds which get up*, they being generally the old ones; then, either yourself or by your marker, mark down the remaining birds, and proceed at once to hunt for them wherever they may be, if not more than half a mile distant, which is not likely so early in the season. If they have dropped in turnips, take up one of your dogs, unless both are very steady, and proceed to beat for them carefully. When found, they will often get up singly, but if not, then proceed as in the stubbles, and mark again; the third time they are almost sure to be scattered, and you may then secure all the remaining birds, if you have good luck and a steady dog. When this first covey is disposed of, but not till then, proceed to search for another, and, as the day wears on, try for them on the fallows, if dry, or in the turnips, where they collect in the middle of the day, even if not driven there on purpose; or you may often find them in the grass which is generally left by the side of a brook, especially if search is made in the middle of a hot September day. Here they are almost always scattered, and require a fine-nosed dog to make them out, and they lie very close. When, in the middle of the day, during the latter end of December, birds are not to be found, and there are open spaces of grass in any neighbouring covert or "spring falls," there is the most likely place to find them. They are exceedingly fond of such places, when they have been much driven about; but they seldom are found in thick underwood.

DRIVING partridges has recently come into fashion in England, after the end of September, when they often become so wild as to be unapproachable even in turnips. It is practised exactly on the same principles as are described as in use for grouse-shooting, at page 82.

The ARTIFICIAL KITE is employed to make partridges lie, when they are wild, and it no doubt is successful in accomplishing what it professes to do. It is flown like a schoolboy's kite, but being made to resemble a large hawk, it alarms the birds so much that they lie like stones. Its frequent use, however, drives them off the beat, so that in small manors it is highly objectionable, except as an occasional expedient, when one good day is very much wanted. With the kite a good bag may be made in bare countries at any time, supposing there is wind enough to fly it. Many men, however, object to it as unsportsmanlike; though I cannot see on what ground, unless it be that it not only alarms the birds on the ground it is flown over, but also on the adjacent land. Still, it enables dogs to be used when they would otherwise be worthless, and this is, *per contra*, a point in its favour.

SECT. 6.—EXPENSES OF PARTRIDGE-SHOOTING.

	£	*s.*	*d.*
Hire of manor, which may be calculated at 5*l.* per 100 acres.	50	0	0
One keeper, at 18*s.* per week	46	16	0
Gratuities to labourers . .	5	0	0
Travelling expenses . . .			
	£101	16	0

Or about one-third of the expense of grouse-shooting. This estimate is, however, rather a low one.

SECT. 7.—QUAIL AND LANDRAIL-SHOOTING.

The QUAIL (*Coturnix communis*) and the LANDRAIL (*Crex pratensis*) are often met with in partridge-shooting. They are nearly of the same size, but

fly very differently. Both are migratory birds, and arrive in this country in the latter end of April or beginning of May, seldom remaining after the middle of October, and generally not quite so long. A *bevy* of quail, as the brood is called, is seldom seen in Great Britain, but occasionally one or two turn up in a covey of partridges—they fly in the same way, and dogs generally stand to them. Landrail are never found in greater number than two together, except by accident. Their flight is exceedingly soft and bat-like, though slow; they can scarcely escape the gun when put up, but run so much as to be very difficult to spring. They do much harm to the dogs by this propensity to run, and pointers and setters should not be encouraged to hunt them; they are oily for the table, and are only fit for the sport and amusement of schoolboys. These young gentlemen may amuse themselves by calling them with a notched piece of copper drawn over a piece of bone, which imitates their note, and brings them close to the gun, when they may be routed out with a terrier or cocker. They are eminently adapted to schoolboy sport, because they generally frequent places unoccupied by game, and near villages, &c., such as vetches, willow-beds, and market gardens.

The Great Plover (*Œdicnemus crepitans*) is often met with in September by the Norfolk, Suffolk, and Sussex partridge-shooters, and, indeed, over all the sandy soils in the south-eastern parts of England. It frequents open sheep downs and large fallow-fields, and is rather difficult of approach, so as seldom to allow the dogs to point, but getting up wildly and out of shot. By great caution and keeping up wind, it may sometimes be shot. Its food is composed of slugs, snails, worms, and insects; and it is also said to devour frogs and mice. In length, this bird is fully seventeen inches. The iris is golden yellow; base of bill greenish-yellow, point black. The back is of a pale brown, each feather having a dark-brown stripe down its middle; wing primaries very dark brown, the first two having a white patch at the end. Tail-feathers tipped with black, then a broad bar of white, and the remainder of a mottled brown. The breast, belly, and vent are almost white; legs and toes yellow; claws black.

The Golden Plover (*Charadrius pluvialis*) belongs to the true plovers. It is found, during summer and early autumn, on the high breeding-grounds of the grouse and partridge, in Scotland and the north of England. It assembles in large flocks, as soon as the breeding-season has terminated. A remarkable peculiarity connected with this bird, in common with some other plovers, is, that it changes its plumage in the spring, and retains that change till the autumnal moult. This change is common to both sexes, and consists, in the golden-plover, of an alteration from a greyish-white colour to black on all the under parts of the body. The old feathers actually receive the black pigment in the spring, and new ones, in addition, show themselves. The spring moult, therefore, is an addition, not a change; and the quill feathers are not lost nor altered. The golden plover lays four eggs, of a stone-coloured ground, blotched with dark brown. These are large in proportion to the size of the bird, which is eleven inches long. These birds feed on worms, snails, &c.; they have a shrill, whistling note, which may be easily imitated, and in this way they are often decoyed. They are excellent eating, and fetch a good price in the London market.

The Dotterel (*Charadrius morinellus*) approaches very closely to the golden plover in habits, and is found on the same kind of ground, though reaching somewhat farther inland. On the downs of Wiltshire and Berkshire, small flocks, or trips as they are called, are often seen in the spring and autumn, as well as on the chalk-hills of Hertfordshire and Cambridgeshire; here, however, they are only met with on their passage to their breeding-grounds, which are farther north, on the high moorlands of Scotland and the north of England. The plumage of this bird is very rich; beak black; iris brown; back of head and neck dark brown; back ash-brown—feathers edged with buff; tail greyish-brown tipped with white; breast rich fawn colour, with a band of white extending from shoulder to shoulder, and edged with a dark line; belly black; legs and toes greenish-yellow.

The Grey Plover (*Squatarola helve-*

tica) is like the golden plover in most of its habits; but, from the presence of a hind toe, it is not included among the true plovers. It is only a winter visitor, breeding in high northern latitudes. The beak is black; iris very dark brown; top of head white; back black and white; chin, breast, and belly, black; vent and under tail coverts, white; legs, toes, and claws, black; length of bird, twelve inches. In winter, the grey feathers become paler, and the belly is grey instead of black.

THE PEEWIT, OR LAPWING (*Vanellus cristatus*) is so well known as scarcely to require description. It is found on all poor waste-lands where the fields are large; but it is so wary as rarely to come within gun-shot. Its eggs are sought after as a great dainty.

THE BUSTARDS, great and little, are now so exceedingly rare as not to be worth noticing in any treatise on Shooting.

SECT. 8.—SHOOTING HARES AND RABBITS IN THE OPEN.

THE HARE (*Lepus timidus*), and the RABBIT (*Lepus cuniculus*), are, in most countries, the object of the shooter in those open situations only where the former is not capable of being coursed, and where the latter is found lying out, as among turnips, or in hedgerows, &c. Both require the aim to be carried well forward; and if the former is going straight away, the tips of the ears, if erect, are the best situation to point the gun at. In coursing districts, it is considered as great a crime to shoot a hare, as in fox-hunting districts to shoot or trap a fox; but in thickly-inclosed countries, the hare affords even less sport to the courser than to the shooter, and there she may well be knocked over with a charge of shot. Pointers and setters will stand both hares and rabbits, if they are shot to them; but if this is never done, they soon learn to disregard the scent altogether, unless, by the way, they are allowed to chase. It is at those animals that the badly-broken dog so often tries the temper of his master, because he not only, in chasing them, runs the risk of putting birds up, but he also very often chases the hare so far as to be lost to sight for a considerable time. The whistle is used till the cheeks ache; and it only requires the presence of a Frenchman, and his constant "Sacré nom," &c., to complete the picture of impotent fury. It is no use thrashing the dog, the only result being that he will refuse to come back next time, and will hang about at the distance of a field, completely upsetting all the plans of his master, who is set at defiance by his slave. For these rascals the only remedy is the spiked collar, which may be had at the gunmaker's of varying degrees of severity; the pointer's thin skin requiring a less sharp one than the setter's hairy coat. By working the dog with a cord of about twelve or fourteen feet in length, he is capable of being stopped with great severity, if he chases when the hare starts from his point; or, if the hare goes off her form without his finding her, the cord generally brings him up at some hedge, or in cover. It is a cruel remedy, but the only one for a badly-broken and unruly dog, and is certainly preferable to a charge of shot, which is the alternative. Colonel Hawker has given a drawing in his book of a collar, consisting of two side-pieces of iron, connected by a screw-piece at the top, and united at the bottom by a triangle running through open eyes at their extremities. This, he says, by attaching the cord to the triangle, is made very severe, the two side-pieces being pressed very strongly against the dog's neck. But as there can be no doubt of the *efficiency* of the spiked-collar, and as both depend upon the pain they give for their utility, I can see no object in substituting a cumbrous and expensive machine for a light and cheap one. Neither will stop a dog, except by the pain it gives him, and therefore they are both objectionable if they can be avoided; and if one of them must be used, which I believe it must in troublesome cases, I should certainly give the preference to the old and long-tried mode, over the plan proposed by Colonel Hawker, high as his authority stands as a sportsman.

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CHAPTER VI.

MARSH AND FEN-SHOOTING.

Sect. 1.—The Birds met with.

Snipe-shooting is the most important and interesting of the various kinds of shooting included under the above head; but many other birds which are exceedingly good for the table are met with in the fens of Cambridgeshire, Norfolk, Lincoln, and Essex, on the eastern coast; and on those of Lancashire, Cheshire, &c., on the western side of England. In Ireland, especially, this kind of shooting is very good; and in some of the bogs forty or fifty couple of snipes may be easily bagged in the day. The following birds may all be included under this head; though some, as the plovers, for instance, are generally more abundant upon high and dry land. All, however, are found in the same manner as the grouse and partridge—by the aid of the pointer or setter—and therefore they can scarcely be included under Wildfowl Shooting. At the head of the list stand the snipes, as affording the best sport of any.

The Great or Solitary Snipe (*Gallinago major*) is not very common in this country, but it is occasionally met with in the fens of Essex and Norfolk, which it visits only in the autumn. In length, it is about twelve inches, and it weighs from seven to nine ounces; female larger than the male—which latter is lighter in colour than the female. The bill is of a pale yellow-brown, becoming darker towards the tip; iris, dark-brown—a dark line extends from the eye to the base of bill; top of head, rich dark-brown, with a longitudinal stripe of paler feathers. The whole of the breast, and the scapulars and interscapulars, of a rich dark-brown. Tail-feathers, sixteen, of which the eight outside ones are nearly all white—middle eight tipped with white, next to which is a bar of black, then a chestnut bar, and the bodies of the feathers composed of a brownish-black. Chin, pale yellow-brown; breast and sides covered with semicircular patches of dark-brown on pale ground; belly and vent dirty-white; legs and toes, greenish-brown.

Common Snipe, Snite, or Heather-bleater (*Gallinago media*), is an indigenous British bird; though many also arrive from beyond the seas in the autumn and leave in spring. It breeds in considerable numbers in the heaths and moors of the northern counties; and often disappoints the grouse-shooter, by rising before his dog's point when he anticipates a more desirable shot. When descending from its flight, it makes a peculiar noise with its wings, which is compared to the bleating of a goat; and, as it chiefly makes this noise when descending to its mate, after its rising to a great height in the air, it is supposed to be a manifestation of pleasure or excitement. Its food, like that of all its tribe, consists of worms and insects, small snails, and seeds; the last, probably, are only accidentally swallowed with the worms and other live food. The whole length of the common snipe is from ten to eleven inches; beak, two and three-quarters; female larger than male. The plumage is much the same as the solitary snipe, with the exception of the tail, which has only fourteen feathers, of which the anterior two-thirds are of a dull black, edged with brown; beyond this they have a patch of chestnut, then a dusky-brown band, and, finally, tipped with chestnut. It lays five or six eggs, of a pale-olive colour, irregularly blotched with dusky-brown.

The Jack Snipe, Judcock, or Gid (*Gallinago gallinula vel minima*), visits Great Britain in the winter only. It is more solitary than the common snipe, and is a very sluggish bird, being often difficult to put up—so much so as sometimes to allow the dog to catch it on the ground. Unlike the common snipe, it utters no scream on rising, and is remarkable for confining itself to peculiar localities, which it almost invariably visits at the same period of the year. It is not known to breed here; and the eggs, which have sometimes been shown as those of the jack snipe are pronounced

by Mr. Yarrell to be those of the purre. In length, it does not exceed eight and a half inches; beak, one and a half. The plumage, in winter, is more of an ash-grey than the reddish-brown which it bears in autumn and spring. The old birds may be known by the brilliant iridescence of their feathers. The plumage differs from the two above described in the following particulars, viz.:—It has no light longitudinal mark on the top of the head; tail-feathers twelve, all greyish-black; breast, belly, and vent all white.

Besides these three species, there are also found, occasionally, though very rarely, the BROWN SNIPE, and SABINE'S SNIPE, the description of which it is unnecessary to give.

IN ADDITION TO THE SNIPES, on most of our fens other birds peculiar to these localities are occasionally met with and shot, if approached with quiet and caution. The sport they afford is certainly not equal to those kinds I have previously described; but as it does not require a game licence to shoot any of these birds, with the exception of the snipe, and as in many of the fens permission to shoot is easily obtained, it is well calculated for the young beginner. In the fens of Cambridgeshire, near the University, there is seldom much of this kind of sport, because the Cantabs are continually driving the birds away by their persecutions; still it is of service to them in affording exercise, and the hope of sport if not the reality. At some distance, and towards the coast, plenty of birds may be found, and a great variety also. The following are the principal kinds in hard winters:—

THE BITTERN (*Botaurus stellaris*).—It is a very shy bird, and difficult to approach within shot.

THE HERON (*Ardea cinerea*).

THE RUFF, female REEVE (*Philomachus pugnax*).

THE GODWITS, BAR-TAILED AND BLACK-TAILED (*Limosa melanura et ægocephala*).

Among the plovers the males are larger than the females; but the reverse is the case with the snipes and godwits. The great plover, golden plover, grey plover, and dotterel are found also among the fens and marshes, but they are more frequently found on high and dry ground; and I have therefore included them in the chapter treating of that kind of shooting. All these birds are migratory, and some are only occasional visitors to Great Britain. To the sportsman, the most interesting are the snipes, the bulk of which arrive in the autumn on the east coast, where they only stay a short time, and then pass on to the interior and to Ireland. They return in the spring, taking the reverse course, and are again found on the eastern coast in February and March. The whole of the low coast on the eastern side of this island is the resort of these birds in the autumn and spring, but during the severe winter months they prefer the warmer bogs of Ireland and the west coast of England and Scotland. Snipes almost invariably fly up-wind, and when the gun is pointed at them they dart and twist in a wonderfully rapid manner, at which time they are very difficult to hit; but by catching them either the moment they rise, or when they have done twisting, they may be readily bagged with No. 8 shot. They are not capable of carrying off much shot; and, if a larger size is used, the intervals between the pellets with an ordinary gun will be greater than the size of the snipe's body, and, consequently, frequent misses will occur.

SECT. 2.—THE DOGS USED IN SNIPE-SHOOTING.

Snipe-shooters prefer the setter, because he is more capable of sustaining with impunity the wet and cold of the marshes, in which this bird is found, than the smooth-skinned pointer; he should, however, be a very steady dog, and accustomed to work to hand, and to keep to heel when ordered. A pointer will do the work well for a time, but is almost sure to suffer from rheumatism or the yellows before he has done a week's work. Every snipe-shooter, when he means business, should provide himself with one or two good setters and a retriever—though the latter is not so necessary as in partridge-shooting; for, as the setter is generally used for snipe single-handed, and as he must learn to foot the snipe and to potter a good deal, he will scarcely get much harm from retrieving, if made steady to "down charge."

Sect. 3.—Fen-Shooting.

When starting in search of snipe, choose, if possible, a mild day, after rain, but with the surface just becoming dry; for if very wet, the snipe refuse to lie, as do most birds, in fact. Walk up-wind to the end of your beat, with your dog or dogs at your heels, and you will pick up a few shots, but not many; when arrived at the end, cast off your dog, and let him steadily beat every inch of ground, taking it in a zigzag direction, but always keeping your face more or less down-wind. This will give your dog the chance of using his nose, and yet enable you to get between the snipe and the wind, which they always try to face, and, in doing so, are very apt to make a circle round you, thereby offering a very favourable shot. When your dog stands, keep well to windward of him, always going up to him on that side; be very careful not to hurry yourself or your dog, and do not shoot till the snipe has done its twistings, unless he first rises at more than twenty yards from you, then have him down at once. If your dog finds a snipe to windward of him, and you are behind, your only chance, unless you are a crack shot, is to head your dog well, and prevent the snipe going off in the wind's eye away from you, in which case his vagaries are so eccentric as to baffle most eyes and hands; but as snipe generally lie well, you need not make so great a circle as for partridge or grouse under similar circumstances. Setters generally take to snipe soon; and only require a few to be killed to them, to make them as fond of the sport as of grouse or partridge shooting.

Calls.—In shooting plovers and the other fen birds above mentioned, in consequence of their excessive wildness, calls intended to imitate their various notes are used. These may be obtained at the bird-shops and at some few saddlers, notably at Davis's, West Strand. If the calls are well made and properly used, plovers may often be tempted within range of the shooter, who is more or less skilfully concealed; but this plan, like most others, requires a good deal of practice.

Sect. 4.—Dress.

Recollect, that in snipe-shooting there is a constant risk of getting into water up to the hips, or nearly so. If wet legs are objected to on the score of health, long waterproof boots should be worn, with plenty of warm hose, drawers, and flannel-waistcoats.

Most snipe-shooters prefer leather boots (well dressed) to those made of indiarubber, which, although they keep out the wet most perfectly, yet have the objection that they also completely keep in the perspiration. It is seldom, in spite of these precautions, that the snipe-shooter passes the day without getting wet, as he is almost sure to get into the water while shooting. Nothing is so treacherous as boggy and marshy land, and therefore he ought to walk cautiously the whole day; if, however, the sportsman takes care to keep his boots waterproof, by the following composition, he will only require to keep his upper works dry by avoiding severe rain and absolute duckings.

Receipt for Waterproof Boots.

Boiled linseed oil	1½ lb.
Yellow wax	3 oz.
Canada balsam	1 oz.

Mix over a slow fire. This is to be rubbed in once or twice a week with neat's-foot oil, according to the amount of exposure to wet.

But the snipe-shooter may persevere with impunity, through any amount of wet, if he takes care to keep moving, not to drink any quantity of ardent spirits, and to change his clothes the moment he ceases his exercise. He should also, as soon as he can after a wetting, soak his feet and legs in strong hot salt and water, and then clothe warmly. The two great promoters of disease are spirits and sitting in wet clothes; and both may easily be avoided, without loss of sport. The coat, waistcoat, and trousers should be of woollen, but varying in thickness, according to the weather. Velveteen is very cold when wet; and all the Mackintosh inventions retain the perspiration too much to be safe for those who indulge in active pedestrian exercise.

Sect. 5.—The Gun, and Accessories.

These may be the same as for partridge-shooting, but the shot should never be larger than No. 7; some use No. 9, but it is not heavy enough to bring the birds down with certainty; and it is more humane to allow them to

escape the shot, than to send them off with two or three wounds in their bodies, each containing a pellet of No. 9, which may cause them to die a lingering death.

Sect. 6.—Expenses.

The expenses of snipe-shooting are so variable as to make it quite impossible to form an estimate which could be at all serviceable. Many English and Irish marshes may be shot over without difficulty, not being preserved at all, or with very little strictness. The French marshes are also celebrated for this sport, especially the neighbourhood of Abbeville, and in some parts of Brittany good snipe-shooting is also obtainable; but as this book is restricted to British sports, I shall not venture into a consideration of them.

CHAPTER VII.

COVERT-SHOOTING.

Sect. 1.—Habits of the Pheasant.

Pheasants, woodcocks, hares, and rabbits are all found and shot in the woods of Great Britain; but the Pheasant (*Phasianus colchicus*) is the grand foundation, the *pièce de resistance* of the covert-shooting in this country. Cock-shooting is said by Colonel Hawker to be comparable to fox-hunting; but is only attainable at certain periods, soon passing away, and is confined, even then, to favoured localities. Pheasants, however, may be reared in any part of England, Ireland, or Scotland, where there is dry, healthy covert for them. They are esteemed as the greatest delicacy, being of a flavour commensurate with their size, and form a most important item in a basket of game sent as a present. For this reason they are carefully preserved, and most probably will continue to be so, by those who have purses long enough to be able to pay for such an expensive luxury; for, though they may be bought at about 7*s.* per brace, they generally cost more nearly 1*l.* 10*s.* than that lower sum. But, while they are so easily poached, and sold by the poacher, this will always happen, because the game-preserver rears three times as many as he bags; and therefore he must always calculate each

bird to cost him thrice as much as it would do if no poaching were carried on. It is quite unnecessary to describe the form of this bird, which is familiar to all. It is not indigenous to this country, but was introduced from Georgia originally; it has now, however, become naturalized, though its high price in the market would soon render it as scarce as the bustard, if not strictly preserved. It can be tamed to a certain extent, but even if brought up with poultry it retains a certain degree of wildness, so that the least alarm occasions it to retreat in terror to some protection afforded by an adjacent shrubbery or plantation. The pheasant roosts in trees, and is very fond of the fir and other horizontal-limbed evergreens, which afford good shelter from the rain and also a substantial perch. Spruce-firs they are very partial to; and in these trees they are not readily picked off their roosts by the midnight poacher. Pheasants have a strong propensity to use their legs in preference to their wings, when disturbed; and this must be considered well by the sportsman in pursuit as well as the keeper in defence of his game. The latter I have already directed how to manage his department, in the chapter devoted to the preservation of game; the former I will endeavour to assist in the present one. The hen pheasant lays about ten to fourteen eggs, and begins to sit early in May. She sits twenty-four days, and hatches towards the end of May or beginning of June. About twenty years ago the Chinese pheasant was extensively introduced, and turned out to cross with the common pheasant, on account of its more rapid flight, and thus affording greater sport. Since then crosses have been tried with the *Phasianus versicolor* in the wild state, and in confinement the large and beautiful Reeves's pheasant has been tried. We may, therefore, expect to see a strange mixture of breeds, and few pure birds of the original breed will be left. The cross with the *versicolor* is large and handsome, its flesh being excellent—that with the Chinese is not improved for table purposes.

Sect. 2.—Best Dogs for Pheasant-Shooting.

For the purpose of hunting the pheasant so as to compel him to rise before the shooter in covert, the spaniel or cocker is no doubt the best kind of dog. Pointers or setters which are broken to run in when ordered may do in open spring-falls, and there they afford excellent sport, but they are too large for thick covert, and recourse must be had to a team of small spaniels, either regular springers or cockers. Among the springers the Clumber is the most fashionable, but the Sussex is still preferred by some people, while the old Norfolk spaniel maintains his place, and there are various other breeds of local note. The cockers are chiefly either Devonshire or Welsh. These generally give tongue, varying in note with the kind of game before them; but they are sometimes mute; the Clumbers being always so. Terriers also are occasionally used, but they have seldom sufficiently good noses for the purpose, and they are difficult to break from vermin. The springer is a larger dog than the cocker, has a smaller eye, and greater strength and hardihood. The cocker has a most delicate nose and a keen perception of the shades of scent, giving a slight whimper on first touching upon it, and changing to a merry note only when quite hot upon his peculiar game. These last are exceedingly pretty workers, and if they only had equal powers of endurance with the springer, would be ten times as valuable; they are, however, delicate, and their eyes are so liable to be bruised and torn that a very few hours' work will knock them up. Many sportsmen prefer the setter or pointer for covert-shooting; and if there is much spring-fall, so that the setter can be seen, he is, I think, quite as good as the very best spaniel, and much better than a bad team; in thick coverts, however, he is of no use, as his size prevents his getting through the runs, and he would leave great quantities of game unfound. If used, he ought to break his point at command, and is often even better than any spaniel at a body-scent, provided he has as good a nose; still it seldom happens that he can hunt a foot-scent like these dogs, or that he can distinguish between a true and a "heel" scent, which spaniels soon learn to do. It is very wonderful to see pointers and setters go into covert, and break their points continually, and then come out and stand for an hour in the

open; yet such is constantly seen in old, steady dogs; but such animals are seldom of much use out of covert, as they are constantly poking along the hedgerows, and leaving the regular line of beat untouched. My preference, therefore, for pheasant-shooting, would be given to a good useful team of the Sussex spaniels, which have plenty of courage and hardihood, but require also lots of work to bring them down to steady hunting. Once broken, they are exceedingly good dogs, and their noses are as tender as that of the best cocker that ever hunted. The Clumber spaniel is, however, the fashionable dog of the day, and being easily kept in command, he perhaps deserves his reputation; but one hard day knocks him up for a week.

NUMBER OF DOGS REQUIRED.—Of the large springers, two couples and a half or three couples are enough for any covert, and one couple will suffice for most purposes. Of the smaller sorts, double the number will be none too many.

SECT. 3.—BREAKING AND USING THE SPANIEL.

THE BREAKING OF THE SPANIEL should be commenced very early, especially with the larger and stronger sorts. They are naturally very impetuous, and yet must be restrained in their range to thirty yards from the gun at the most. They should be taken out first of all in small coverts and hedgerows, and imbued with the desire to hunt, which they acquire readily enough; and at six or eight months old are generally quite ready for any sport they may be entered to. Previously to this they should be accustomed to come to heel, and keep there as long as they are ordered; and they should be used to hunt to the wave of the hand, and not to break fence till permission is given them. Great care should be taken that they are not allowed to amuse themselves by "self-hunting," which they are very apt to indulge in when first entered to game. When spaniels are intended exclusively for pheasant or cock-shooting, or both, they should be kept carefully to those birds, and should be stopped, and rated soundly, whenever they "speak to fur;" but the great point is to get them to keep close to the gun, and not to press their game until they are sure that the sportsman is near enough to take advantage of their efforts. Few spaniels are really worth having till they are nearly worn out, for their struggles in wet covert, with briars and thorns, soon spoil their looks, and their constitutions too. When too riotous, there are three methods of steadying them—first, to put one fore-leg into the collar, compelling the dog to hunt on three legs; second, to hang a shot-collar round the neck; and third, to confine one hind-leg by a strap, buckled tightly round the leg, above the hock. The strap must be changed repeatedly from leg to leg, as it soon cramps the muscles so much as to render them useless. If the fore-leg is put in the collar, this leg also should be occasionally changed. There is very little choice in these modes; either will answer the purpose of subduing the courage and pace of the dog; the shot-collar is, perhaps, the least discouraging, but it scarcely acts sufficiently with most dogs; and, if a heavy fall is sustained, the neck may be broken by the shock. If the puppy is not inclined to hunt, let him be put on the scent of pheasants when just off the feed, and let him rout them about well for a few minutes; this is not often to be done without injury to the preserve, but it may be occasionally ventured on after the young birds are able to fly, as the dog soon causes them to get into the trees, leaving a strong scent behind. Spaniels should be made to drop to the gun and to the hand very strictly, and this may be taught by the pistol; but it must be enforced on all occasions when game is before them.

A retriever is very useful, as it is very difficult to prevent the whole team of spaniels from bringing game, if any one of them is allowed to do so; but they soon learn to "down charge" strictly, and then the retriever goes to the dead bird and retrieves it for his master. In first entering young spaniels to hunt in the hedgerows, if the breaker is out alone, they should not be allowed to go through to the other side, but should be kept carefully on the same side as the shooter; afterwards, however, when they are accustomed to the range, and keep watchfully eyeing the sportsman to see that he is within reach, they may be sent to the other side, and put to hunt everything out on the same side as the gun, which

is always the most effectual mode with a single shooter. When the young spaniel is first put into a large wood, and is beyond the supervision of his master, he often ranges the entire covert, and does immense mischief to the sport, driving everything out of shot. He should be well loaded with shot, or have one of his legs taken up, and be put to hunt with two couple of steady old dogs, even if he is so confined as to do nothing. He will soon learn to imitate his fellows when he sees them pay all attention to the gun, and when he finds that game falls to their hunting, whereas he has never yet succeeded in obtaining such a result. After a time, his leg may be set at liberty, and he may probably take to his work kindly enough, and refuse to leave the other dogs far. He will not probably do much good, as this work requires great experience, but he will do little harm. It cannot be expected that the spaniel will learn his business in one season, and he is seldom perfect in two; but he will help to do the looking-on part, and will animate the old, stale, but steady and clever dogs, to increased exertions. Many sportsmen are constantly animating their spaniels, by cries of "Have at 'em!" "Cock! cock! cock!" &c. &c.; but this is perfectly useless, the slightest whistle being sufficient to indicate the whereabouts of the gun, and more than this, interfering with the sport, because it shows the game what they have to avoid, and when to avoid it. If the spaniel is fond of his master, and accustomed to work for him, he is as much occupied in watching his motions as in seeking for game. These dogs have a very strong love of approbation; and very fortunately this is so, because they are so much more beyond the master's control than the pointer or setter.

Mode of using Spaniels in large Coverts.—Unlike grouse and partridge-shooting, the early morning is as good a time as any for pheasant-shooting; and most ardent sportsmen of the old school select that time, especially if they mean to beat the hedgerows, which they can do as the birds are returning from their feed, after which they should follow them into covert, and, with a wave of the hand, order in the spaniels, with "Have at"—pronounced "Haave aat"—which should only be used just at first by way of encouragement. After this—keeping them carefully near him—the shooter should watch for a whimper, and press rapidly forward to that dog; as soon as he gets to him, the little creature is sure to push on, and will, if of a good nose, soon either undeceive him by silence, or drive up a pheasant or cock. The great point is to rush well forward, as far as possible in front of the dog throwing his tongue, wherever he may be, and being regardless of thorns or brambles. Nothing can be effected without this rush, as pheasants will run for many yards before dogs, if not rapidly pushed, and will generally get up far out of shot, or so protected by the trees as to be defended by them from your gun. Little light men have consequently a worse chance at this sport than strong and tall ones, who are able to raise their arms and guns above the underwood, and carry all before them. It is seldom that a pheasant can be marked into another part of the same covert; and, indeed, if it is so, the bird seldom remains near where he alighted, but runs a long distance, and then lies quietly in the thickest and most impenetrable part. If this sport is to be followed with much success, the spaniels must be broken from "fur," both in the form of hares and rabbits, as they will otherwise neglect the pheasants, and take to the four-footed game. This can only be done with spaniels whose breed is very pure, and free from the strain of the beagle, which so many of our old spaniels are crossed with. The Clumber breed, when pure, is said to disregard hares and rabbits, until thoroughly entered to them, and always to prefer "feather" to "fur." This, however, I never saw; nor did I ever witness the hunting of a thoroughly-broken team of any spaniels. I have seen a few good ones in my life, but never a perfect team at work. For this reason, perhaps, I never saw so much to admire in covert-shooting as in partridge or grouse-shooting.

Sect. 4.—Various kinds of Pheasant-Shooting.

In hedgerows and spinneys, as pheasants have a strong scent, both body and ground, they may readily be found by the setter or pointer; but they are so carefully driven by the

keeper every night and morning into the coverts after feeding, that it is generally out of the question attempting to shoot them anywhere but in these secure retreats. In former days, good sport was often afforded by spaniels in hedgerows, or by a steady old pointer; and even now, in certain situations near preserves, where the keepers have not the right of driving them, *and where this right is carefully watched* by those who have it, a good hour's sport may often be obtained. The shooter should begin near their covert as soon as the pheasants are running back to it, which they generally do up the dry ditches, or under the hedges if the former are wet or absent, immediately after feeding. By thus intercepting them they are obliged to rise, if the dogs are worked down the hedgerows away from covert and there is a gun on each side the hedge. It often happens that there is a brook or river intervening between the cornfields and the covert; here the pheasants *must* rise to return; and if they are in the habit of crossing it to their feed, the shooter should station himself near the brook, and send the spaniels to begin at the other end of the fence and drive towards him. The pheasants are sure to run till they know they must rise, which they do about thirty or forty yards from the edge of the brook, in order to get well over it; and at this point they may be met and knocked over, taking care to have a good water-retriever, in case they fall into the brook. In many situations, also, there is a chain of small plantations, where the pheasants breed in preference to large woods, and which the keepers soon drive them from, if permitted to do so. Here they may be shot readily in the early part of October, by sending in the spaniels, and posting two guns on each side of the end towards which they are to be driven, and two others walking on each side the plantation parallel with the dogs. A man or two, however, should accompany the dogs, and beat steadily through the whole length of the plantation to prevent the pheasants running back. This kind of sport is generally met with on farms where the game belongs to the tenant, and where the pheasants are preserved with some little care from the end of hatching to the middle of October, by which time they are all either shot, or driven to the neighbouring strictly-preserved large woods, from whence the old hens originally came. It must be remembered, that pheasants are polygamous birds, and the hen only is concerned in the care of the young. She is ready enough to remain with the rest of her sex in the harem of her lord and master till she is obliged to prepare her nest, at which time she is looking out for solitude, and prefers a quiet little spinney or plantation all to herself, even though in the midst of cultivated land, to sharing the secluded wood with her rivals, of whose jealousy she is afraid for her brood, though not for herself.

Wild Pheasant-Shooting.—Again, in large woodlands, which are either wholly unpreserved or not carefully preserved, an occasional pheasant may be met with in the course of a day's cock-shooting; but these are exceptions nowadays, and cannot often be calculated upon with sufficient certainty to warrant a man in going out for pheasants alone.

The Battue.—It is for the purpose of the *battue* that pheasants are now reserved and preserved with all the formidable retinue of head-keepers, under-keepers, day-watchers, and night-watchers. None but men of large means, and in possession of extensive coverts, can indulge in this amusement, except by the invitation of those who have at their command these pleasant auxiliaries to sport; but in this instance power has been abused, and instead of promoting sport, it has totally destroyed it. No one can deny the fitness of the pheasant for affording gratification to the good sportsman, if the bird is fairly found, put up, and shot; but as well might "mobbing" a fox be called fox-hunting, as a *battue* be considered genuine pheasant-shooting; and this I will endeavour to show in the following description of this amusement:—In the *battue*, nothing short of hundreds, or if possible thousands, of killed, to say nothing of wounded, will constitute a successful day. The pseudo-sportsman who should be tempted from his fireside and his *Times* after breakfast by anything short of five brace an hour to his gun, would be strongly inclined to complain, and would think, if he did not say, that his presence had been

obtained under false pretences. The mode usually adopted is as follows :—

First, get together eight or ten crack shots, who may, many of them, be in wheeled-chairs or on shooting-ponies, but should be capable of killing, without spoiling, this beautiful bird ; then, having breakfasted the party, proceed to post them at certain stations where the game must cross a piece of open ground commanded by the shooters' guns. Thus, in wide coverts, the guns are arranged along the edges of the open springs, at about 40 or 50 yards apart, so as to command every head of game which passes, whether pheasant or hare, or sometimes rabbits, &c., each shooter having two or three guns, and a man to load them ; for even now, when breech-loaders are indispensable, one gun would become too hot for use. As soon as these are posted, the beaters are sent to the other end of the portion of wood which is to be driven, and they proceed to drive the game through it, often with the aid of a steady dog or two, but as often without any such assistance. For some time nothing is heard but the men calling to each other to keep the line, or their taps on the trees, &c., which may be distinguished at a long distance ; presently a hare canters quietly out of the edge of the covert, and, putting up her head to observe what is going on, is knocked over—as easy a shot as a farm-yard cock tied to a tree. Next, perhaps, a rabbit shares the same fate ; she however, seldom waits to look about her, but goes at a flying pace, and is a fair mark for a good shot. By and by, another and another shot is heard, with the squeal of a hare or two following them ; then the beaters may be distinguished approaching, and their blows and cries are very loud and audible. The shooters are now collected to the spot to which all the beaters congregate, termed *the bouquet*. Here expectation is on tiptoe, every moment being the one at which the slaughter is supposed to be about to begin. Suddenly a loud "whir-r-r" is heard, followed by the peculiar "cock-cock-cock-cockle" of the cock-pheasant, of which some one, two, or three rise from the edge of the high wood, to be as certainly brought down; as fast as one falls another shares his fate, and in five minutes or less the ground is covered with the slain. In many instances, low nets are fixed along the edge of the wood, which compel the pheasants to get off their legs and rise, as they are so very tame, and so much inclined to run, as to escape in that way but for the nets. In this manner, the whole of the pheasants in a portion of wood, or a great part of them—that is, all those which have neither doubled back nor escaped the guns—are brought to bag, and the keepers' retrievers are set to work to recover those which are not artistically disposed of. As soon as this part of the work is accomplished, another portion of wood is driven in a similar way ; and this is repeated, till the whole of the preserves are exhausted, or the sporting (!) propensities of the guests fully gratified.

Now it will be observed that in this description nothing whatever has been said of finding the game, or of the use of the instinct of the dog, or of the gratification of the desire for exercise, or even of the benefits derived from it ; on the contrary, the admirers of this sport are generally wholly ignorant of the art of finding game, or of the hunting of the dogs, or unwilling or incapable of using their legs ; they only long for blood—which may really be said to form the positive, comparative, and superlative degrees of their ideas on the subject. There may be some excuse for the boy feeling gratification and pride in obtaining the mastery over a fine pheasant by this kind of butchery ; but I never could see the grounds for these feelings in a full-grown man, with all his faculties about him. For a gouty valetudinarian also, who still clings to his old associations, I can find some excuse ; but these form only a small proportion of those who habitually delight in the *battue*. However, we have no right to complain of the taste of others, especially when the gratification of that taste is not within our reach on every occasion. The appetite for money no doubt increases by its gratification, and I suppose the same must take place in the votaries of the *battue*, as nothing else will account for the extraordinary lengths to which it is carried. When the covert is of such a nature as to prevent the posting of the shooters in the spring-falls, portions of it are divided off by long nets, and the game is driven towards the open fields, in the same way as I have before described ; but here every bird that escapes is liable to be lost, as it flies clear away, and if

it has no secure retreat within the same preserve, is almost certain to fall a victim to some expectant gun; good shots are therefore at a premium in such a kind of wood, and few bad ones find themselves included in the invitations. It sometimes happens that the nets are evaded, by the birds hopping over them; but these are exceptions, and the great majority never attempt to pass them, after finding themselves stopped from running by them. A net a yard high is quite sufficient; but even if they have run the gauntlet of half a dozen nets, they get caught at last in the final corner, where they are surrounded on all sides by the beaters, and compelled to face the redoubtable phalanx awaiting them. I have been repeatedly tempted to partake of this amusement, but I never felt otherwise than ashamed of myself during its continuance; and I would desire nothing more than to stir up the same feeling in the breasts of others, before they have been tempted to try its effect upon themselves.

Excuse for the Battue.—The excuse made for this abuse of sport is, that where pheasants are thick, no one gun, or even two or three, can pursue them in the old sportsmanlike way without losing a great many, which are driven off into an enemy's country. Now, this I admit fully. It *is* impossible to enter a covert abounding with pheasants, and hunt them with spaniels, without nine-tenths of the birds running off out of shot, and escaping to a distance; and if pheasants are wanted for the table, and must be killed for it, and, by consequence, must also be reared and preserved for it, then kill them in this way; but let paid hands do the butchery, and do not gloat over your victims, and dignify their slaughter with the name of sport. Domestic poultry must be reared and killed; but who would admit the pleasure of wringing their necks or cutting their throats? Yet where lies the difference? The pheasant is not even a difficult shot. On first rising from covert, his flight is slow and hurried, though when in full swing it is often fast enough, and the man who can be sure of a fast "rocketer" must have a good eye and hand; but the shots presented in a *battue* are almost always easy ones, and the practice afforded is so great that those who indulge in it are almost sure of their mark. The only excuse I could ever make for myself or others who have partaken of the *battue*, is, that as it is a rare and expensive amusement, people are apt to value it by the general estimate—namely, its cost. Everyone knows that pheasant-preserving causes a most extravagant outlay, and he also knows that he cannot indulge in the sport many times a year. This may perhaps account for the high rate at which it is estimated, but is only a lame apology at the best.

Sect. 5.—Dress and Gun.

The sportsman who indulges in wild pheasant-shooting should be well protected with velveteen or fustian jacket and trousers; and he should have a strong cap, with a good projecting peak or poke to it, which will save his eyes from the thorns and brambleg His gun, also, should be a short breech-loader, not exceeding twenty-eight. inches in length of barrel; and, in fact, two inches less, if a good one of that length can be procured. For first-rate *battues* a pair of breech-loaders, with a man to load, are indispensable, and any shooting-dress will suffice.

Sect. 6.—The Woodcock.

The Woodcock (*Scolopax rusticola*) is a native of the north of Europe and Asia. A few usually remain to breed in Great Britain, but the great majority visit this country only in the winter, arriving in the beginning of October, and leaving in March or April. After the first arrival of this bird, it always confines itself to the thickest and most impenetrable covers by day; but at night and very early in the morning it visits the swamps and meadows, in search of the worms upon which it feeds. When it breeds here, its nest consists of a loose mass of leaves and grass placed in some sheltered bank far from the prying eyes of children. It lays three or four eggs of a yellowish-brown blotched with brown of a darker colour, and mixed with grey. In length, it is about fourteen inches, and twenty-five from tip to tip. Its usual weight is about twelve to thirteen ounces, but sixteen ounces is not unfrequently reached, and Yarrell mentions some much heavier, even up to twenty-seven ounces. The

head is of an obtusely-triangular shape, and the eyes are placed very near the top of the ears. The upper mandible measures about three inches in length, and is furrowed nearly the whole length; its tip projects beyond the under one, which it overlaps, forming a kind of knob, and this is endowed with an extreme degree of sensitiveness, by which the bird is enabled to discover the insects it is in search of in the mud. The woodcock is essentially a nocturnal bird, and its eyes, like all of that class, are large, full, and dark. While other birds are alive and doing, these are asleep under some bush, concealed by thorns or evergreens; and it is only when aroused by the dogs that they fly up and endeavour to reach a more secure place of concealment. Several varieties of this bird visit our shores, and this most probably arises from their migrating to us from such an extensive range of country. Dr. Latham makes out three distinct varieties; but as one of his has a white head, it is most probable that it was only an accidental pied colour, and not a distinct and continued variety. It may, however, be asserted pretty generally, that the first comers are fuller, fatter, and duller than the November cocks, which are nimble and active, easily rising high above the underwood, and being, consequently, difficult to kill. The sex of the woodcock cannot be ascertained from its outward appearance, either as regards form or feather. It has frequently been stated that differences of marking in the outer flight-feather and pin-feather of the wings distinguish the male from the female; but dissection of numerous examples has proved that these variations are the result of difference in age and not of difference in the sex of the bird. Every epicure is familiar with the flavour of the woodcock, and with its mode of dressing without being drawn.

Principal Localities of the Woodcock.—These birds are never, or very rarely, seen to arrive on the coast; which is not so much to be wondered at, since they are, in other respects, nocturnal. They generally come over with a light easterly or south-easterly breeze, but are often caught in their passage by an adverse current, and are then much exhausted, so as to be almost unable to rise for some time after landing. At this time they may be found in the ditches near the shore, and will submit almost to be killed with a stick or a stone. They soon pass inland, and even cross over to Ireland in great numbers, though a great many also reach that country direct from France and Spain. Large quantities of woodcocks are taken by traps and nets, chiefly on the coasts of Devonshire, Dorsetshire, Hampshire, and Sussex, from which counties they are sent up in vast numbers to the London markets, and to the large provincial towns. In Wales and Scotland —particularly its western coast—they are also taken in the same way, to a great extent, and these supply the Bath and Bristol and the Edinburgh and Glasgow markets. Indeed, it is seldom that a shot woodcock is sold in the shops, for the bird is so easily torn and disfigured by the gun, that the netted one is vastly preferred, and therefore the poacher commands the market.

Sect. 7.—Dogs used for Cock-Shooting.

These are the same as those recommended for finding the pheasant; but the setter is here wholly useless, as the haunts of the cock are inaccessible to so large a dog. The Sussex spaniel is the best I have ever seen, being hardy, and capable of bearing wet with impunity. His nose is also wonderfully good, which its full development, in point of size, would lead one to expect. Being bred so much for hunting cocks, these dogs own the scent very easily, and seem to delight and revel in it, giving generally a very joyous note on touching upon their trail. The true Sussex may easily be kept strictly to feather, and though they will readily hunt fur when nothing else is to be had, they do not prefer it, as most other dogs do.

The Number of Dogs used in this sport should be at least two and a half or three couples, as the coverts are generally large and very thick; but I should always prefer hunting two couples at a time, and giving the other couple an hour's rest—thus, always having one couple fresh and one tired at work together.

Sect. 8.—Cock-Shooting.

The Mode of using the Dogs in Cock-shooting is very similar to that

adopted in *wild* pheasant-shooting, except that different localities are visited by the two kinds of birds—the pheasants keeping as much as possible to the dry and sound parts, and to those which are tolerably open, while the cocks select the neighbourhood of moist low ground, though they do not choose the actual swamp for roosting. For this purpose they prefer the shelter of thick bushes, and low evergreens when they can find them; for, though they frequent wet and marshy ground for feeding, they are particularly addicted to protected roosting-places, such as holly and juniper bushes, or even laurel or laurestinus, when planted in the midst of water, as in ornamental islands, &c. During long frosts the inland springs are frozen, and the cocks are compelled to leave them and seek the salt marshes, where the springs are seldom quite hard; but in very severe winters even here their food is sometimes frost-bound, and great numbers of woodcocks are starved to death, as in the winter of 1838-9, and in that of 1854-5. Woodcocks generally take the same line of flight in going to feed, as is the case with nearly all migratory birds; and in flying, even from one covert to another, they may always be seen to take the same ride or break in the trees. In beating large coverts this is very conspicuous, as there are always certain spots where cocks are shot, if any are to be met with. Knowing old hands take advantage of this, and station themselves there to await their crossing. Beaters are very useful to assist the dog in this kind of shooting, but the grand requisite is a set of good markers, because the cocks can seldom be shot the first time they are put up, and do not run like the pheasant after they alight. Many skilful sportsmen place two or three *good* markers in the highest trees, on the opposite side of a large covert to that which is to be first entered; then, going in themselves, they get what shots they can, by pushing up rapidly to the dogs, as in pheasant-shooting; and as soon as they reach the other side, they are guided to the points where all the disturbed cocks have dropped, which a good marker can point out by the trees which he has marked and knows. Here they will always be found by careful hunting, and may then generally be flushed and shot at, if not bagged. In high bare-stemmed larch or fir coverts these birds are more easily shot as they rise above the low underwood, and before they reach the branches of the trees; but in lower oak or beech woods they must be watched for in the openings, and snapped at in a moment, or all chance is lost. Woodcocks, when disturbed by the dogs, often settle just outside the coverts, which the markers can readily see; and here they can easily be got at and shot with facility. They generally go straight away from the gun till they near the bushes, when they shoot and twist in a manner which makes them very difficult to kill at that moment. Each successive time they are disturbed they lie closer than before; but when put up, their flight is more rapid and snipe-like in proportion to the frequency of their disturbances. If therefore the middling shot misses a good opening the first or second time, he seldom replenishes his bag in the subsequent ones at the same bird; and in this way I have known six or seven shots fired at one cock on the same day without ultimate success, though afterwards another bird has immediately fallen to the same gun.

This variety and uncertainty give great interest to the sport; and it certainly deserves all the encomiums which have been passed upon it. The irregular flight of the bird; his mode of flapping his wings, peculiar to himself; the way in which he shoots right or left, after a slow and smooth flight—changing from that of a tame owl to the velocity of the hawk—all conduce to give interest to his pursuit. Sometimes you may hear him and see him with facility; at others you hear him, but cannot catch even a glimpse of the bird; whilst again you hear and see him for a moment, then lose sight, and finally obtain such a view as to be able to account for him to your own satisfaction, if not his. But it is chiefly in wild, rocky districts that this bird can be pursued with the best effect; in fact, in those only where open spaces alternate with thick clumps of low bushes. Here he may generally be hunted with spaniels to great advantage, and, indeed, their presence is essential to the sport, as no man can penetrate the thick clumps of holly and juniper which abound in

some parts of Wales and Scotland. No bird is so often missed, because every one who can get a shot is sure to snap at him with the hope of a stray shot telling; whereas in the pursuit of partridge, grouse, or pheasant, the shooter does not put his gun up without a fair chance, knowing that, if he does not get a shot at them to-day, he will, or may, next week. No one likes to maul a woodcock to pieces by firing at a few yards distance, which might often be done when he first gets up; the shooter therefore, in great anxiety to obtain the prize, waits till he is at a fair distance, and then is suddenly surprised to see him begin to dart round some shrubs, which he fancied too low to interfere. His much-coveted prize is this time secure; but he follows him up, and after much trouble, gets a good shot, and perhaps drops upon another or two in finding this one. Such are the glorious uncertainties of woodcock-shooting.

No bird lies closer than a cock, and in some situations when these birds are not much disturbed, the spaniels will actually rout them out with their noses, and even chop them occasionally; but this is not often the case, as the bird is very nimble in evading the jaws of his enemy. In order to hunt them well in thick coverts, the spaniels ought to have their master with them, as they require every encouragement to make them penetrate the tangled masses of underwood frequented by the cocks; if, therefore, the keeper is accustomed to them, by all means let him hunt them: but if not, the master must undertake that duty, even if he loses a few shots by so doing. I have said that, in all cases, if a spaniel is on the trail of a cock, the shooter should get to him as quickly as possible; but if he is hunting with the wind, and *there is enough of it* to be plainly felt in covert, the bird is almost sure to come up wind into the shooter's face; and he had therefore better remain quiet in as open a spot as he can pick, and catch his bird as he comes. Woodcocks killed dead occasionally fall at some distance, and are very hard to find, as few retrievers can hit off the body-scent of a dead cock which has not run at all. In this kind of retrieving, the sagacity of the Newfoundland comes into advantageous play, as he seems to mark with great accuracy the spot where the bird fell, and to find it by eye rather than by nose.

Sect. 9.—The Dress and Gun.

The shooting habiliments should be the same as in pheasant-shooting, except that, as the ground is generally more or less swampy in places, the boots should be carefully dressed with the water-proof composition. Snipe-boots would soon be destroyed by the thorns and briars, and are therefore out of the question, besides being too cumbrous for this active exercise. The gun is exactly the same as for the pheasant.

Sect. 10.—Hare and Rabbit Shooting.

The Hare (*Lepus timidus*) is usually shot in covert, except when preserved for coursing; but it is poor sport, as she never goes faster than a canter while in covert, and may be killed with certainty by any tyro. It can only be for the pot or for the purpose of increasing the list of the slain that this game is shot. Besides, when using spaniels, the killing of hares spoils them for pheasant or cock-shooting, as they always own the scent of game which is killed to them.

Rabbit-shooting is a different affair altogether from shooting hares, and affords, in my opinion, the very best sport of all, in covert, excepting only wild pheasant and woodcock shooting. This of course has reference to the hunting them with dogs, and the shooting while going at their best pace, which is undoubtedly a racing one. Rabbits breed in warrens, in hedgerows, and in covert, and multiply very fast indeed. There are said to be several distinct varieties; but I believe there is no truth in the assertion, the kind of food only causing a *temporary* difference, and not permanently causing a distinct variety. Warren rabbits removed to a covert and there allowed to breed soon attain the same character as the prior denizens of the same locality. The sport of shooting rabbits is never carried on in the warrens, because the warrener does not wish his property wasted, and prefers trapping them, for obvious reasons—one being, that the wounded rabbits often escape into the holes and die out of reach. In hedgerows, they may be hunted with spaniels or terriers, and shot as they come out; but they generally have

holes in the banks, and they soon reach them in safety. When driven to their fastnesses, the ferret is the only resource; and these animals, after being muzzled, soon drive them either to the gun or into bag-nets placed over the holes. But it is to the covert-shooting of rabbits that I wish to draw attention, that being the only kind of rabbit-shooting which is to be considered worthy the attention of the true sportsman, and which, I have already remarked, is really worth it. Rabbits are now much encouraged in large pheasant preserves, partly for the sake of the keepers, whose perquisite they are, but chiefly because they afford food for the foxes preserved for fox-hunting, which would otherwise prey upon the pheasants. The keeper feeds his foxes when young regularly upon rabbits wounded and left near their earths; and, consequently, these rabbit-fed animals keep to the same fare, and are thus prevented from interfering with the pleasures of the *battue*. The keeper continues to shoot a few outlying rabbits round the covert, and those which are thus wounded suffice to keep up the supply for the foxes, in addition to those which the keeper may purposely leave for him, or the fox may himself succeed in laying hold of. When the pheasant-season is over, and the foxes also have been thinned, it will be found that the rabbits must be kept down on account of the young crops, which they begin to bite off most cruelly. In February and March, therefore, good sport is usually afforded by this thinning of the rabbits, several hundred couples being often killed in a single preserve. At this time a great number of rabbits lie above ground, preparing for their young, or driven to seek the pleasures of love, or from other causes of which we, in our ignorance of their language, have not yet fathomed the motive. However, there they are; and in the spring-falls of a large wood they may be found lying in tussocks of grass or in little bushes. For these the vermin terriers of the keepers are the best dogs, as they hunt them very quietly yet strongly, and your regular springers or cockers would be utterly spoilt for pheasant or cock if allowed to hunt rabbit. By sending the keeper and his terriers into the wood, the rabbits are driven across the drive, where the guns should be posted at sixty yards' distance from one another; or, if the spring-falls are quite open, they may walk then in line. As the rabbits are put up, they cut in and out of the rides or runs, and require great quickness of eye to catch them before they are lost to sight. The guns must be carried on the shoulder, full-cocked; and great care must be taken not to shoot the terriers, as they are hunting close upon the scut of the rabbit. I once shot a very valuable dog in this way, with the rabbit actually in his mouth. This was as the rabbit was coming out of a bush, and the dog so close upon her, that, as she sprang through, the terrier did the same, and received my charge in her breast, killing both dog and rabbit. It is needful to aim well in front of rabbits, as they run so quickly by you, that if you do not take this precaution you are sure to shoot behind them. The knack is easily acquired by a quick eye and hand, but a slow man had better not attempt what he will be certain to fail in. In shooting rabbits, Colonel Hawker advises the sportsman to get into a tree, but this can scarcely be called sport, though something of a piece with some kinds of wild-fowl shooting. I should only advise pot-hunters or boys to resort to such an unfair advantage. If, however, they are to be *destroyed* as injurious to the farmer, the plan is no doubt a good one; but for this purpose the use of the ferret is by far the best resource.

Sect. 11.—Expenses of Covert-Shooting.

The cost of rearing and preserving pheasants is enormous, usually reaching from half a guinea to a guinea a head for each bird bagged. Woodcocks, being birds of passage, are not capable of being preserved, except during their short stay, when they require intruders to be prevented shooting or trapping them. Hares also require strong watching, and are even more liable to the attacks of poachers than pheasants; but as they are generally preserved with those birds, and are considered subsidiary to them, their extra cost is seldom brought into the calculation.

CHAPTER VIII.

RIVER AND POND SHOOTING.

Sect. 1.—Birds found on Rivers and Ponds.

Here we have little opportunity for the skill of the sportsman to display itself; and the pretensions of this kind of sport are not such as to meet with the approbation of such a glutton at the gun as Colonel Hawker. Still, many sportsmen prefer it to the punt-shooting so much lauded by that ardent admirer of its peculiar advantages. I shall first enumerate the birds which are met with, and then detail the best modes of shooting them on the rivers, ponds, and small lakes of this country. Some of them, as the ducks, teal, and widgeon, are also shot from the punt; but as they are to be met with in large quantities in rivers and ponds, I shall include them under both kinds of sport. At the head of this list stands

The Mallard or Wild-Duck (*Anas boschas*).—This is said to be the parent of our domestic duck, one variety of which it resembles in colour, though somewhat less in size, and having dark legs and toes. Some few ducks breed in this country, but the vast flocks which frequent our coasts and internal waters are migratory birds, and are only here in the winter season. When breeding in Britain, they make their nest in some quiet hedgerow or high bank near a river or brook, and lay fifteen to eighteen eggs of a greenish colour. The young wild-ducks are diligently sought for just when they are becoming fledged, and are scarcely able to make use of their wings, in which stage they are called "flappers."

Widgeon (*Mareca penelope*) are next in size to the wild-duck. They seldom are found far inland, therefore they afford better sport to the puntsman than to the river-shooter; they are, however, very good eating, and will reward the sportsman for his trouble if they are shot on the internal waters. In the adult male the length is about eighteen inches; bill, brown-black; iris, brown; top of head, white; cheeks and back of head, chestnut-red; back, greyish-white, with irregular lines of black; tail pointed, and nearly black; wing-coverts, white tipped with black; a green speculum, edged with black, on the outer webs of the secondary wing-feathers; chin and front of neck, black; lower part of neck, pale reddish-brown; breast, belly, and vent, white; legs and feet, dark-brown. The old male birds to a great extent assume the feathers of the female in July, and continue so

till the autumnal moult. In the female, the length is about 16½ inches, and the following points of difference occur: head and neck, reddish-brown, speckled with darker brown; back, two shades of brown in each feather. The young male birds resemble the female.

The Pintailed Duck (*Dafila acuta*) is also occasionally found on our internal waters, and is one of the first taken in the decoys in October. Its flight is very rapid. No duck is better for the table, the flavour being excellent. In July the male assumes the same plumage as the female, but recovers his masculine colour in the autumnal moult. The length of tail will always serve to distinguish this duck from the widgeon, whose plumage it resembles in other respects.

The Pochard or Dunbird (*Nyroca ferina*) receives its second name from the peculiar colour of the eye. It is a winter visitor to this country, appearing in October, and leaving in the spring. It resorts to inland waters as well as the sea-shore, and is a very shy and wary bird. It is of a very good flavour, and highly esteemed for the table, resembling the famous canvas-backed duck of the United States, though but a humble imitation, in my opinion. The length of this duck is 19½ inches. The male has a pale-blue bill, with a black point and base; iris, red; head and upper part of neck, rich chestnut; lower part of neck and upper part of breast, deep black; back, of a freckled-grey; rump and upper tail-coverts, black; tail, greyish-brown; lower breast and belly, grey; legs and toes, bluish-grey. The female has the bill all black; iris, brown; head and neck, dusky-brown; lower part of neck and breast, dark-brown.

The Teal (*Querquedula crecca*) is the smallest of our ducks, and one of the richest in flavour; it is therefore much sought after by the sportsman who regards his stomach or those of his friends. It frequently breeds in Great Britain, especially among the lakes of Westmoreland. Its flight is very rapid, and it affords an excellent mark to the skilful shot. From this circumstance it is still better suited to single shots than to the large punt-gun. Like all the duck tribe, it feeds by night. The female lays only seven or eight eggs of a whitish colour. In the adult male, the length is 14½ inches; the bill is black; eyes, hazel; forehead, and band extending backwards, chestnut-brown; a narrow line of buff from the nape to the occiput, over the eye, and also from under the eye to the lower part of ear-coverts — between these two lines a spot of rich green; cheeks, and remainder of the side of the neck, chestnut; back of neck and back transversely lined with black and white; wings, brown, in various shades — a speculum on the secondaries, of velvety-black, green, and purple, tipped with white; tail, pointed, dark-brown; chin, black; front of neck, chestnut above, with spot of black on a white ground below; legs and toes, brownish-grey. Like the widgeon, the male birds lose their distinguishing feathers in July. The female has the whole of the head speckled with dark-brown; back, dark-brown, mixed on each feather with lighter brown; wing, like the male; chin, pale-brown; lower part of neck has crescentic brown mark, instead of spots of black; sides and belly, dull white, spotted with dark-brown.

The Bald Coot (*Fulica atra*) is a bird well known throughout England, being a permanent resident in the ponds of the ornamental grounds of our aristocracy. It weighs about 28 ounces. In colour it is a deep black, excepting the outer edges of the wings, and a spot under each eye, which are white; under parts of a dirty lead-colour. The nest is a huge mass of rushes, &c., quite on the water's edge; and it lays eight or nine greenish-white eggs.

The Greater Coot is only a larger variety of the preceding, which it resembles in all other respects. The coots are often shot on our ponds, and by some are preserved expressly for that purpose. Colonel Hawker maintains that they are not to be considered as worth powder and shot in fresh water, because they cannot then be slaughtered in sufficient numbers; but I confess I cannot see the force of his reasoning, though he has obtained such an undisputed empire over this species of sport that it requires some courage to throw doubt on his dictum. Still it appears to me, that there is quite as much sport in killing one bird with an ounce of shot, as in killing 20 with 20 ounces. Nothing surprises me more than the inconsistencies of sport. In one kind (as for instance, partridge and grouse shooting), it is considered as the

highest degree of pot-hunting to shoot into the middle of a covey or pack; whilst in another (the shooting of wildfowl), the sportsman is told that one bird is not worth his notice, and that he must wait quietly till he can catch a whole lot of them within the deadly circle of his fire. How is the young sportsman to reconcile these incongruities? The only answer is like that so often given by English grammarians—"there is no invariable rule, but each kind is governed by its own laws." What is right at Poole or Southampton, is entirely wrong on the stubbles of Norfolk or the moors of Scotland. The coot is a very difficult bird to flush, as it keeps among the reeds and rushes, diving at the approach of the dog. By following these birds up with a good dog, they may sometimes be made to rise and then afford an easy shot.

The Moorhen or Gallinule (*Gallinula chloropus*) is very commonly met with in our rivers and ponds. Here it swims gracefully, searching for aquatic insects, and nodding its head at every instant. It dives remarkably well and quickly, and remains in the reeds with only its beak above the water. On account of its diving so rapidly, it is rarely bagged without the aid of a dog, as it does not rise to the surface, if death takes place after the dive. On land it runs rapidly, cocking up the feathers of its tail, which are white beneath, and seeking the secure retreats afforded by the water as rapidly as possible. Its nest is built among the sedge, and it lays seven or eight eggs of a yellow colour, with brown spots. The young birds appear only like a brownish-black mass of fur or down, and swim about in the most lively manner. In the male, the beak is yellowish-green, with a red base; on the forehead is a naked patch of red; iris, hazel; back, wings, rump, and tail, dark-olive brown; head, neck, breast, and sides, dark-slate; belly and vent, greyish-white; above tarsus, a ring of red; legs and toes, green; length, 14 inches.

The Water-Rail (*Rallus aquaticus*) resembles the moorhen in general figure, though differing in colour, which is more like the land-rail. The back is spotted or speckled-brown; cheeks, chin, sides and front of neck and breast, lead-grey; vent, buff-colour; legs and toes, brownish-red; length 11¼ inches.

The Grebes (*Podiceps cristatus*, *P. auritus*, and *P. minor*) are like the moorhens in diving powers, and resemble them much in habits. All the grebes feed upon fish and water insects. The lesser grebe is also called the *Dabchick*. It is a very timid bird, and disappears by diving on the slightest alarm. It is easily domesticated on our ornamental waters, and dives and comes up again, over and over again, as if for the amusement of the spectators.

Three species of the sandpiper frequent our rivers, of which the summer snipe or common sandpiper is the most familiar. They are—

The Green Sandpiper (*Totanus ochropus*), of whose habits very little is known. They are very common in spring and autumn, and frequent the banks of brooks and inland rivers. They feed on worms and insects; and they have a shrill note, of a whistling character. Beak, greenish-black; iris, hazel—as in the snipes, a line from it to the eye; white mark over the eye; back parts of head, neck, and body, dusky-green; primaries, dusky-black; tail-coverts and feathers, white. The outside tail-feather has one dark spot on the outer web; the next, two spots; and the third and fourth, two black bands; the others also have several bars. Under-parts of the body, white; throat, streaked with dusky lines; legs and toes, greenish-black. Length 9½ inches.

The Wood Sandpiper (*Totanus glareola*) resembles the preceding in habits and general appearance, but differs in being somewhat smaller, the length being only 9 inches. Iris, dusky-brown; tail-feathers with six or more narrow transverse white bars, on a ground of greenish-black; legs and toes, olive-green.

The Summer Snipe or Common Sandpiper (*Tringoïdes hypoleuca*) is found very generally on all our rivers, lakes, and canals, where it breeds on the banks. It is mostly seen running along the gravelly edges in search of its food, which is composed of insects and worms. It utters a peculiarly sharp note when disturbed. Beak, dark-brown, with a yellowish base; iris, dark-brown; dark streak from beak to the eye; upper part of body greenish-brown; four middle tail-feathers

greenish-brown, with a blackish stripe across the centre, and all barred with black—four outer ones tipped with white; primaries almost black, with a greyish patch on all but the first; all the under parts of a pure white; legs and toes, dark-green; length 7½ inches.

Such is a list of the birds chiefly frequenting our ponds and rivers. Occasionally others are met with, but those I have enumerated form the bulk of the number.

Sect. 2.—Best Dog for River Shooting.

The best Dog for hunting these birds in the brooks is the old English or Irish water-spaniel; but a good rough fox-terrier will answer very nearly as well. The former will be found under the general description of the dog; but his specific education had better be here introduced.

Breaking the Water-Spaniel or Retriever.—As these dogs are required for punt-shooting as well as river-hunting, and as their education is better commenced on the river-side than in the punt, it will be well to enter in detail into their education here. Nothing answers better for this purpose than the shooting of "flappers," which now is not legal until the 1st of August. The water being then warm, and the young birds awkward and not very good divers, great encouragement to persevere is afforded to the dog, and he may be easily induced to swim more or less for hours, and to hunt the side of a brook in the most ardent manner. There is very little difficulty in entering these dogs to wildfowl, as they seem to have a natural bias that way; but they should be carefully broken from rats, which abound on the banks of rivers and ponds. The only art consists in confining their range, by making them beat to hand, and in persuading them to retrieve wounded or dead birds. The range is much more easily taught the water-spaniel than the land variety, because he is almost always in sight of the shooter, and always within the sound of his voice. If, therefore, the puppy has been taught to come in at the word "Back!" and to turn to the right and left on land, in obedience to the hand, as in ordinary spaniel-breaking, he will be sure to obey in the water, where he seems to ask for the directions of his master. The eye of the swimming dog is only able to command a small circle, being very little raised above the level of the water, and therefore he cannot see far from his nose; but by watching the hand of his master—for the voice should not be used more than necessary—he is often directed to the right spot, and afterwards is glad to claim the assistance which is found to be so useful. The water-retriever is most easily taught on land, like the land-retriever (*see* the directions of "Idstone," at page 83), and when tolerably efficient then he may be taken out by the river side as above mentioned. The *desiderata* in a water dog are—a liver colour, without white, black and white being alike conspicuous; an extraordinary nose, to make out waterfowl, whose scent is not remarkably strong; and a woolly and oily coat, to resist the water. Here there is a very great difference, some dogs being able to remain in that element for hours, while others are rapidly exhausted, and this arises mainly from the cause above alluded to. He should bear cold as well as wet; and be thoroughly amenable to command, so that he will lie for an indefinite time without the slightest movement, waiting his master's order to hunt or retrieve. He should also be mute, as his tongue is never required, and would often disturb distant waterfowl. All these qualities are scarce, and should be highly prized when they are united in one, which they seldom are. The fault of the old liver-coloured water-spaniel, whether Irish or English, is, that he is too often headstrong and impetuous; while the Newfoundland is too bulky, and tires rather sooner than is desirable; his colour, also, is not so good as the spaniel's.

Sect. 3.—Duck-Guns and Accessories.

The Duck-Gun is a totally different tool from the ordinary fowling-piece, though for flappers, and some of the common sorts, the latter may suffice; but for the wilder varieties a more deadly weapon is required—and such is the long tube called a duck-gun. Colonel Hawker has established a control over the opinions of sportsmen on the subject of wildfowl-shooting, as far as the principles on which the sport is conducted are concerned; but in his

plans he was more theoretical than practical. Since his time also the breech-loader has been invented, and this has done away with one of the chief difficulties connected with punt-shooting, viz., that of getting at the muzzle for the purpose of loading. The enormous increase in numbers of intending shooters has, on the other hand, so added to the difficulty of getting at the birds, that small yachts under steam as well as sails have been pressed into service, and thus the birds have been rendered more and more wild, until punting has become almost impracticable in ordinary weather. What I am now considering is, however, shooting at wildfowl on rivers into which yachts cannot enter; but still birds are even there wilder than of old, and indeed do not now come inland, as they used to do, in sufficient numbers to give good sport, except when driven there by long continued frosts. When they do come they are seldom met with singly, and hence a quick-loading breech-loader, which will carry a heavy charge, is preferred. The invention of the choke-bore is a great boon to the wild-fowler, as he has not much walking, and can carry a heavy gun with facility. A No. 8 gauge of from 12 lb. to 15 lb. is best suited to a muscular man, but in any case he may have a 12-gauge of 9 lb. or 10 lb. weight, which will stand a large charge. My experience of 10-gauge guns is that they are not much better than 12, and I should advise either the latter or an 8-gauge for this sport.

Dress.—A strong *woollen* shooting-coat should be worn, as the cotton fabrics do not resist cold and wet sufficiently for this sport. Caps should always replace hats, making a considerable difference in the height of the individual; they should also not be too dark, but of a neutral colour. The trousers, or knickerbockers, should be some strong woollen fabric; and woollen stockings, drawers, and waistcoat should be invariably worn. In situations where there is much wading, the long water-boot should be put on over two pairs of woollen stockings. Cording, of the Strand, and Woolgar, Ludgate Hill, London, have each a reputation for india-rubber boots which are perfectly waterproof. If made of leather according to the old plan, they should be well dressed with the linseed oil composition, or, *if time can be given them to dry*, with neat's-foot oil. Nothing keeps water out so well as this last; but it must be thoroughly soaked in the leather, and takes many months to dry so as to be safe in point of health. I have put on boots thus treated, which felt exactly as if thoroughly wet, and would give cold as easily as if they were really so.

Sect. 4.—Wild-Duck Shooting in Rivers, &c.

Wild-Ducks.—When the shooter seeks the wild-duck in the shape of flappers, he should go to the brook or pond where they are supposed to be, and send his dog in among the rushes, woods, &c., along the banks; in process of time he will spring the old duck, and this will encourage him in the search for her brood. By and by a young bird is seen to rush about among the reeds, and makes perhaps an attempt at flight, in which she most probably falls a victim to your shooting propensities. The whole brood should be diligently followed when found, as those which are left will not remain to stand another hunt. By the middle of August the young birds are able to fly to the corn-fields; and towards evening, and very early in the morning, they may be caught sight of and shot in their flight backward and forward to the water, or, after they are in that element, they may be hunted for in the banks and shot. This is very pretty summer shooting, and affords very good practice for both dog and gunner. In many large ponds or ornamental waters these birds are found in great numbers, but will seldom suffer the approach of the shooter, except in their morning and evening flights at this season to the corn-fields. But when small brooks fall into these waters a few stray young ducks may generally be met with and shot.

Shooting Teal.—Of all the varieties of river-shooting, that of teal affords the best sport, as they do not fly far when found, but alight again on the same brook or pond. They are less cunning than the common wild-duck, and are consequently more easily approached; and, being of such a good flavour for the table, they are eagerly sought after. They fly very fast and

strong, but not far; and will sometimes take half a dozen shots before they are killed, if the shooter is a young hand at the business. In marking a teal on a brook, be very careful to cast the eye well forwards, as he is very apt to appear to settle long before he really does, and in this way deceives the sportsman; or he will drop, and then swim away most diligently, without any attempt at concealment in the banks or rushes. The plan, therefore, is to send a man down below him, to head him, and prevent his adopting these tricks.

In shooting Coots and Waterhens the object is to get them on the wing, as they dive at the flash so rapidly that they can rarely be killed while in the water, or, if killed, they die below the surface, and are thus lost. The best plan is to conceal yourself on the windward side of the pond, where you will not be heard or smelt by these birds, and get an assistant to go and put them up with stones on the other side, catching them, if possible, away from the bank; or you may fire at them a long shot, and thus make them rise; but, after all, they are an unmanageable race of bird with the gun.

Sect. 5.—Decoy-Duck Shooting in the Hut.

Description of the Decoy-Duck.—This sport was originally practised in France, but has been to a certain extent introduced into this country, but not with as much success as in France. It requires, in the first place, the aid of six or eight tame and pinioned wild-ducks, and these should be of the French variety or breed, which, like their masters, are vivacious and talkative in the highest degree. Besides these, the shooter provides himself with one or two good duck-guns, and then proceeds to make his hut. In France, the shooters are generally of the peasant order, and follow the shooting of ducks as a trade, which is commendable enough, and the exercise of ingenuity in thus providing for the market, and for the wants of their wives and families, is worthy of admiration and respect. In this country, however, this species of sport, as far as I know, has only been followed by gentlemen-sportsmen, who build huts, and use decoy-ducks, for their own amusement. Now, I have nothing to say against this, for the sport is fully equal, in my opinion, to any other shooting in ambush; and perhaps, since it displays a little more ingenuity than usual, it may stand at the head of that class of sports. It can only be carried on with advantage in the neighbourhood of those spots which are frequented by the ducks in large numbers, because it is entirely dependent upon the power of "calling" down the wild-ducks which the decoy-birds possess. It is well known that all gregarious birds are induced to drop where a good "call-bird" is placed; and this is the case, without exception, through the whole tribe. The Frenchman, therefore, takes advantage of this knowledge, and fastens several decoy-ducks on the water in such situations as shall be within call of the ducks as they fly to and from their evening meal. Then, as they drop to the invitation of the decoy-ducks, they are shot by the ambushed shooter, and retrieved by his dog. Sometimes these huts are fixed at a very short distance from the sea, and at others at some miles from it, but always under the regular line of flight which these birds take. The shooter having taken measures to procure his tame ducks (which he does by taking either the eggs, or the nestling birds while quite young, and rearing them with other and older birds), proceeds to build his hut in the summer season in the following manner:—

Building the Hut.—He first selects a sound piece of ground, either a small island surrounded by shallow water, or a promontory of the same kind partly surrounded by such a shallow. Deep water does not suit his purpose so well, because it compels him to employ his dog in retrieving the wounded or dead birds; and also necessitates the use of a boat in going to and from his retreat. The hut is thus made: a trench is first dug all round the intended site, in order to drain off the water, and leave the bottom dry for the feet of the shooter; next, a space is cut, deep and large enough for the feet and legs of two men, so that they sit down comfortably on the turf itself forming the surface of the island. After this the top covering is put on, which is made of a semicircular form, of willows bent from side to side, and covered at the top with growing turf

A hole is left sufficient for the entrance of the shooters, and this likewise is closed with a door covered with turf or grass. The sides are made up with green twigs, sods, &c., so as to imitate the surrounding objects, and holes are left to admit the passing out of the barrels of the gun or guns in various directions, commanding the places where the ducks are expected to alight.

THE AMBUSH.—When complete, the hut is left till the winter. As soon as that season arrives, the shooter proceeds to his hut just before the flights of ducks are expected, and fixes his decoy-ducks quietly on the water, tying their legs to stakes driven into the ground, if the water is shallow, or to ropes stretched across, if it is too deep for this. Three, five, or seven ducks are thus fastened, with the sexes alternating; but always having a preponderance of ducks over mallards. The decoy-ducks keep up an incessant quacking and chattering; and if they become quiet are started off again by one or other of the following expedients. The first is to rouse them by pulling the cord attached to them; the other, to pinch, or otherwise annoy, a spare duck kept in the hut for the purpose. As the flights pass over these call-birds, they drop some of their members, which are shot by the ambushed-shooter, who has retired to his hut as soon as he has fastened his decoys. He generally waits as long as he thinks it prudent before he fires his gun, in the hope of collecting a great number of birds on one spot, so as to sweep as many as he can; but sometimes, by waiting too long, he loses all; and the great art is to take advantage of the last moment, without waiting too long. When a shot is made, he has only to pick up the dead, and retire to rest as well as he can, or return to his house till a little before day-break, for no more business will be done till then. At that time the ducks are returning to the sea, and may then be caught napping, as before. Wild-ducks and teal are thus shot in large numbers; widgeon, dunbirds, &c., refuse to be charmed by the voice of their pretended friends, and cannot be taken in this way. The old English plan of sinking an oil-cask in the ground, and covering it over, would, I think, be an improvement upon the mere earth excavation, as it would enable the roof to be kept much lower, and would also keep the feet and legs more dry. These huts are warm enough, in consequence of their small size, but they are necessarily damp; and, to those who pass the night in them, they often give serious colds, followed by rheumatism or fever; and it is a task rather than a sport, in my humble opinion.

FLIGHT-SHOOTING has long been practised in England without the aid of decoy-ducks, and by many sportsmen is highly appreciated, as it requires a very quick eye and steady hand to bring down ducks when in full flight. It is not usual to build a hut for this purpose, because any new feature in the line of light is at once detected and avoided by the birds; but some embankment, hedge, or wall, is selected as giving a certain amount of concealment, the best which is at hand being of course chosen. Wild-fowl generally follow the main current of some large river till they approach their feeding-ground, when they suddenly diverge, and rise higher into the air. The ducks are generally in small troops as they fly to their grounds, and in larger flights when they return. The darker the night is, so long as there is sufficient light to take aim, the better for this kind of sport.

STALKING wildfowl is sometimes practised with the aid of a trained horse, but this plan is now almost entirely obsolete, except in one or two districts, where its employment is confined to professional wildfowlers.

DRESS.—The only thing which need be noticed under this head is that long waterproof boots of India-rubber are required to wade to the hut to fix the ducks, and retrieve the wounded and dead wildfowl.

CHAPTER IX.

SALT-WATER WILDFOWL-SHOOTING.

Sect. I.—Marine Wildfowl.

There are three distinct methods of pursuing wildfowl in salt-water districts; firstly, shore shooting; secondly, punting with heavy shoulder guns or with stanchion guns; thirdly, yacht or open-boat gunning with heavy stanchion guns. But before entering into a description of the sport I will first describe the birds which are mostly sought by the gunners. At the head of the list stands:—

The Wild Swan.—There are three species known to visit our shores, viz.: the common wild-swan or hooper (*Cygnus ferus*), Bewick's swan (*C. Bewickii*), and the Polish swan (*C. immutabilis*). Two varieties of the Bewick's swan have also been occasionally secured. In the hooper and Bewick's swans half the bill, from the tip upwards, is black, and the rest yellow. In the Polish swan, the tip only of the bill is black, and from the base of the bill to the eye there exists a strip of black feathers which distinguishes it readily from the two previous species. On the whole, then, the Polish swan, barring that its head is elongated, and that it has no tubercule or "knob," like the tame swan, greatly resembles it. But the latter's "apple" head and knob will readily show the sportsman whether he has made a "mistake," which, by the way, frequently happens, when, in very hard winters, the mute, or tame, swans, take it into their heads to have a fly to sea for some food, which the hard frost prevents them from obtaining in their habitual quarters. Adult swans are pure white, but young birds are ticked brown-grey. Wild swans frequent our shores pretty regularly, and when they first arrive are not extraordinarily shy; nevertheless it takes a very good shoulder-gun to bring them down, but when the weather is very hard, they can be punted to pretty easily, and of course the stanchion gun makes short work of those in its line of fire. When wounded, they fight with extraordinary energy, and great caution is necessary on the part of the sportsman who approaches such a bird. My plan, which I would impress upon young fowlers, is—to give him another barrel as a *quietus*. This saves a deal of trouble.

The Bean Goose, so called from its partiality to bean, pea, and wheat fields, is a very wary bird, only to be reached by chance, or from an ambush, but not to be stalked, its sense of hearing and smell being so acute that it readily detects the sportsman. When on the wing these birds are very noisy, fly in a line, or in V-shaped fashion, the leaders changing places, now and then, as they get tired. The bean goose (*Anser segetum*) is often at a distance mistaken for the Grey-lag Goose (*Anser ferus*), or common goose, which it somewhat resembles, but the latter is bigger, and its legs, which are of a yellow-greyish colour, will readily distinguish it from the bean goose, whose "understandings" are orange-yellow. Moreover, the bean goose's bill (which, by the way, varies in length in the two known species) is orange-yellow, and black at the base, in the centre between the nostrils and base of the maxilla, whereas the grey-lag's (or grey-legged) bill is flesh-coloured, and the nails on the mandibles are pale.

The Pink-footed Goose (*Anser brachyrhynchus*) was only classified in 1833. It has a short, deep pink bill, and feet and legs of the same colour, but a little paler in tint. The White-fronted Goose (*Anser erythropus*) has a pale bill. The Bernicle Goose (*Anser leucopsis*) has a very small black bill, and its legs and feet are also black. The Brent-Goose (*Anser brenda*) has the same characteristics as regards the colour of the bill, feet and legs, and is often confused with the Bernicle goose, but its bill is bigger. They are at times very abundant, but can only be got at by stratagem; an ambush in a creek, or punting skilfully to them, being the most successful plans. There are, besides the above, several other various species of wild geese, of which an enumeration will be sufficient, as they are only occasionally met with,

or favour special localities. The Red-breasted Goose (*Anser ruficollis*); the Canadian Goose (*Anser Canadensis*); the Egyptian Goose (*Chenalopex Ægyptiaca*), are in that catagory.

Geese, as a class, are very difficult birds to reach, and very tough to kill when reached. Head shots with a shoulder-gun are a waste of ammunition; the sportsman should let them fly over his head and fire well under their wings. If crippled, a shot across the shoulders readily settles them. The wild-duck, widgeon, teal, pochard, pintailed duck, have been already alluded to at page 110.

Widgeon and duck form principally the staple of the punt-shooter's sport, but all other birds, if sufficiently numerous, or rare, to warrant a shot, are fired at with the punt-gun.

Besides the five ducks already noticed, the following are met with on the coast, and afford sport to shore-shooters, puntsmen, and yacht-fowlers:—

The Sheldrake, or Burrough-Duck (*Tadorna vulpanser*), and the Ruddy Sheldrake (*Casarka rutila*).

The Black Scoter (*Oidemia nigra*), and the Velvet Scoter (*O. fusca*).

The Shoveller (*Spatula clypeata*).

The Eider Duck (*Somateria mollissima*).

Long-tailed Duck (*Harelda glacialis*).

Gadwall (*Chauliodus strepera*).

Golden Eye (*Clangula glaucion*).

Harlequin Duck (*Clangula histrionica*).

Scaup Duck (*Fuligula marila*).

Tufted Pochard (*Fuligula cristata*).

Garganey or Summer Teal (*Boschas circia*).

The Divers (*Colymbus glacialis, C. arcticus, C. septentrionalis*).

The Grebes (*Podiceps cristatus, P. rubricollis, P. cornutus, P. auritus, P. minor*).

To these must be added—Guillemots, Puffins, Cormorants, Solan Geese, Gannets, Gulls, Herons, Spoonbills, Godwits, Redshanks, Greenshanks, Ruffs, Purres or Dunlins, Knots, the many varieties of Sandpipers, Stilts, Avocets, Turnstones, Phalaropes, Curlews, Whimbrels, Lapwings, Grey Plovers, Dotterels, Sanderlings, Thick-Knees, Oyster-Catchers, Coots, &c.

Wildfowl Nomenclature:—

A "herd" of swans.

A "gaggle" of geese (when on the water).

A "skein" of geese (when on the wing).

A "paddling" of ducks (when on the water).

A "team" of ducks (when in the air).

A "sord" or "suit" of mallards.

A "company" of widgeon.

A "flight" or "rush" of dunbirds.

A "spring" of teal.

A "dopping" of sheldrakes.

A "covert" of coots.

A "herd" of curlews.

A "sedge" of herons.

A "wing" or "congregation" of plovers.

A "desert" of lapwings.

A "walk" of snipes.

A "fling" of oxbirds.

A "hill" of ruffs.

A "trip" is a small number of wildfowl, as ducks and geese, in number thirty or forty.

A "bunch" is a similar number of widgeon, dunbirds, or teal.

A "knob" is a still smaller number of the above birds.

Sect. 2.—Shore Shooting.

The shore shooter should wear light boots, and light-coloured but warm clothing. If possible he should never go alone, but have (if no brother sportsman accompanies him), a bag and game-bearer, who should carry his extra ammunition, a waterproof long-coat, two pairs of mud pattens (which will be described hereafter), and a reliable pocket-compass. The shooter himself should always have a powerful field- and sea-glass, with which to scan the shores and creeks and mark his birds. The smaller shore birds, when on the flats, cannot be seen readily with the naked eye at any distance, even when they move. On the wing, however, as they always "call," they can pretty soon be detected, even when a long way off. The shore-shooter's gun need not be heavier than 12-bore. If full-choked in at least one barrel, all the better, as very long shots have to be taken now and then, in which case large shot from the full-choked barrel will be found to answer admirably. The shooter should bear in mind that in such open spots as salt-water marshes,

or the sea-shore proper, the shot has to encounter the full force of whatever breeze may be blowing. He should, therefore, always make a good allowance for the wind, or he will find his missiles wofully blown down wind. Moreover, the speed of shore birds is incomparably swifter than that of land birds, and the gun should therefore be pitched well forward before firing. Shore shooting may be divided into two branches, viz., tramping either on the shore or in the saltings, and waiting in ambush on the birds' passage, in rocks, or in creeks, or behind a screen at some point. In some parts of the country, barrels are sunk into suitable spots, and the shooters hide therein. A perfectly broken retrieving dog, either water spaniel or retriever proper, is absolutely necessary for this sort of sport. If, however, the shooter wishes to insure all possible chances of success, he should only use a liver-coloured dog. Birds of the duck tribe have a wonderful fancy for such dogs, which no doubt they take for foxes—their natural enemies; and out of spite they often come near them. In fact, this is the secret of decoying ducks into the "pipes" of decoys. Wherever the saltings are so rotten that they cannot bear the weight of the shooter with only his boots on his feet, he should put on his mud-shoes, and be careful how he proceeds. Should he fall in the "soft," he must throw himself on his back and wait for his man's assistance. If no one is near him, he must divest himself of his coat, spread it on the mud, and get on it, when he will soon be able to get on his legs again. The most dangerous "softs" in the saltings are generally light green in colour, and a practised hand, in daytime, readily detects them. (No man in his senses goes tramping on saltings at night.) When birds are on the wing, the shooter should at once stand still, or hide in a creek, if one is handy. Some men "call" the birds, and succeed well; others trust simply to luck. The sport is very fascinating in hard weather on account of the many kinds of birds one gets, and, in suitable weather, thousands of sportsmen visit the coasts for the sake of shore-shooting. The tide being the chief danger to the shore-shooter, he must take care not to forget how quickly time passes away whilst he is enjoying himself, and he must also bear in mind the distance he covers in his perambulations. If the salt marsh is very flat, he must make tracks for the sea-wall as soon as the tide turns and begins flowing, otherwise he might find his retreat cut off by the creeks filling quickly. For the same reason, if a thick fog should occur, recourse must at once be had to the compass, and a retreat be beaten. Many men have lost their lives for neglecting such precautions. The only practical time for shore-shooting over saltings is between high and low tide, because, firstly, the birds come to feed as the tide recedes, and secondly, there is then no danger for the shooter's safety. An early ebb-tide always affords sport, because the birds are hungry and will flock to their feed as soon as the sea will permit the saltings to reappear. When, in severe weather, large birds abound, the shore-shooter gets in ambush with a large-bore gun as near the line of flight, or favourite feeding grounds, as possible, and does great execution. A double 8-bore, or a single 4-bore, breech-loading, is the best gun for the purpose, and as it is desirable to avoid showing one's whereabouts as much as possible, it will be found that the use of the Schultze powder will give but little smoke, make less noise, and kill quite as well as, if not better than, the black powder, and that therefore it is, *par excellence*, the powder for sea sport.

Sect. 3.—Shoulder-Gun Punt or Dinghy Shooting.

Wherever creeks abound, they cut the saltings about, so much, that the shooter finds it impossible to reach the birds by tramping to them. He then has recourse to a punt, with which he can go up every creek, as long as he can find two or three inches of water left in by the tide, and if he manages well, he can pop on the birds almost unawares, as they are feeding on the saltings and cannot mark his progress, since he is totally hidden by the banks of the creeks. Of course, he has either to stand up or to sit up in the punt to fire, hence swivel punt-guns are then out of the question; but as the birds are generally at a goodish range, and moreover, when in their winter plumage, are very tough, the shooter must employ powerful guns of large

bores if he wishes to do anything like execution. I have found a single central fire 4-bore gun, full-choked, everything that could be desired, and with the following loads, viz., 140 grs. of Schultze powder and 3 oz. of shot, the gun will sweep everything in its way up to 120 yards. Some guns, however, are still heavier and carry up to 6 oz. of shot. The stocks should be, in all cases, fitted with a recoil pad —especially for boat work, since a violent recoil, when standing up in a slippery punt, might pitch the shooter overboard. It will be indispensable also for the shooter to have a "cripple" gun at hand, as some of his wounded birds would lead him a long and fruitless chase, if he did not settle them as soon as he can get near enough to them. No dog is required for that sort of sport, but the shooter must have his mud-pattens on whenever he lands, and he should also have a small anchor and a long "painter" rigged on to his punt, and never leave his punt without taking up the anchor and firmly embedding one of its flukes in the *highest* available bit of ground. Some men have lost their lives through neglecting that precaution. They jumped ashore in a hurry and went in chase of, may be, a long-winded cripple. Meanwhile the tide rose, floated the punt and drifted it away, leaving the men to a slow, but sure death.

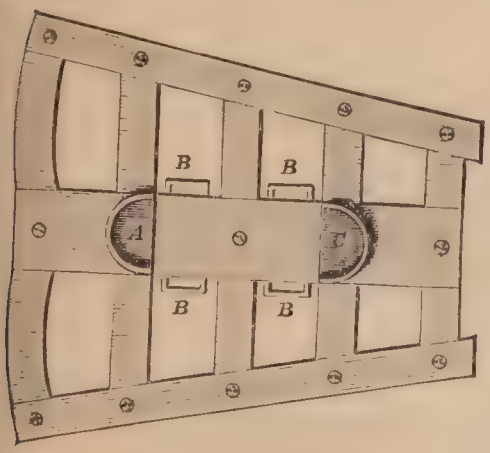
Punting, with a shoulder-gun, is only resorted to in ordinary weather by amateur sportsmen and ornithologists, in search of diversion and specimens. But, in very hard weather, at ebb tides, very good sport may be had at curlews, whimbrels, oyster-catchers, sandpipers, oxbirds and shanks, on the saltings, besides now and then divers, ducks, and teal, and widgeon, in the estuaries.

PUNTS.—The old open punts are entirely discarded now, and half-decked ones have been substituted in their stead, but in pretty fair weather small sailing dinghies are often resorted to, and are built so as to draw but little water and sail and row tolerably easy. Most punts have also now a small mast and sail, but these can only be used when the wind is right astern; otherwise the leeway is a "caution," the punts having no keels. For building these punts, I must refer the reader to Colonel Hawker's and Folkard's works, wherein full details are given, and a regular builder had better be commissioned with the work. The main points are to have the punt so light that one man can, when necessary, drag it over the mud. It should be painted white, and the shooter will do well to have a white smock-frock fitted with a hood, ready to put over his garments and head, whenever he undertakes to punt. He should have a tin box lined with flannel wherein to keep his ammunition, food, compass, and field-glass, as, otherwise, in a punt, everything gets spoilt astonishingly quickly.

Some single-handed punts are built so light that no difficulty is experienced by the shooters in hauling them over a branch of the flats from creek to creek, if an opportunity for a good shot or bad weather should require it. For this purpose, these punts have a square stern and two hand-holes. They must be built to order—since a light man will only require a very light punt, whereas a heavy-weight will need a somewhat more substantial craft. For double-handed punts, (*i.e.* to carry a rower and a shooter) the dimensions are usually 15 feet by 4 feet. They are, however, but very rarely used now by professionals. Amateurs in search of specimens, have, however, to adopt that means of locomotion, since they must have a man to row or paddle them about, and act as a guide.

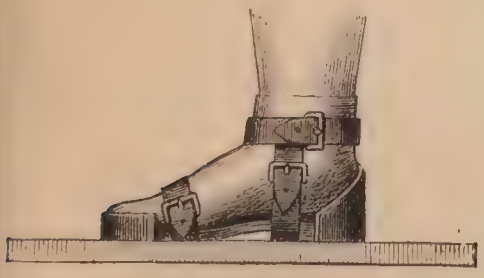
PUNTING ACCESSORIES.—Silence being paramount in punting, the oars must not creak and the paddles must not splash. The oars are therefore muffled with leather, and when the shooter is drawing near his quarry he takes them in, and resorts to his paddles, which must be worked totally in the water and feathered perpendicularly for recovering. They are tied to the gun'ale with a short cord, so that they may be dropped without the necessity of shipping them. In shallows, the setting

pole is resorted to. It is also handy for pinning down the cripples when chasing them on the flats. In addition to these, a pair of mud-pattens are absolutely necessary, and I add the subjoined illustration of the pattens devised by "Wildfowler," and used by him with perfect success for several seasons. The dimensions are, for a 15 stone man :—Middle piece 5 inches wide, 20 inches long ; cross pieces 2 inches wide, length of shortest 10



PLAN OF MUD-PATTEN.

inches, longest 18 inches ; side pieces 2 inches wide and 20 inches long. Thickness of material, throughout $\frac{6}{8}$ of an inch. Lancewood is the best material.



SIDE VIEW OF MUD-PATTEN FIXED ON FOOT.

A and C are two round pieces of iron to keep the heels and toes in position. Through the iron loops, B, the pattens' straps are slipped and then buckled over the foot as shown in the cut.

MANAGEMENT OF THE PUNT AND GUN. — With these accessories, the shooter proceeds (by night, if a professional ; by day if an amateur), and rows or sails until he nears the haunts of the fowl, when he must ship his oars or mast and sail, lie down on his stomach, and paddle or pole to the birds until he is within range. Then, taking the gun and aiming above the birds he calls out, or whistles, and, simultaneously with their rising, he fires. This sort of thing, in daytime, from a deep creek, is very easy of execution, but at night it requires considerable experience to know where and when to fire. A good retriever will be found very handy, at all times, as most of the cripples are so lively that they will escape before the shooter can put on his pattens and go to them with a cripple gun. Moreover, in the night the shooter loses sight of them. When the "flats" are very soft, however, no dog can work on them, since he sinks up to his belly, at once, in the ooze, and flounders there helplessly. In such places, the pattens are very useful to the shooter, but he must be careful how he steps, and will do well to use his pole or his gun as a leaning stick whenever he goes down a small declivity.

THE DRESS, &c., necessary for punt-shooting will be described under the next section.

SECT. 4.—STANCHION GUN PUNT-SHOOTING.

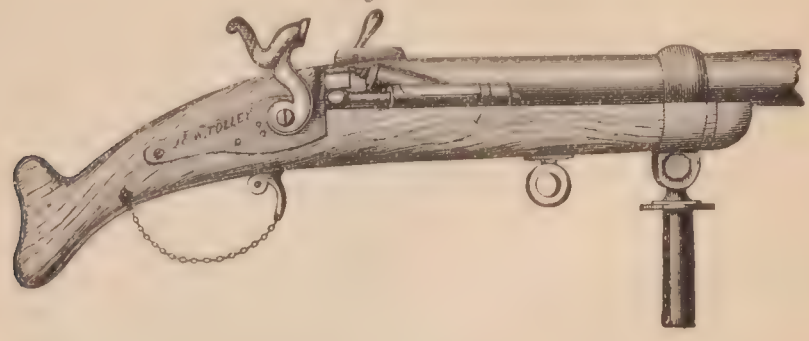
The great difficulty with the old muzzle-loading punt-guns was loading them, as one had to row ashore in order to do so with safety ; and, moreover, owing to the great length of the barrels, it was almost impossible to get the powder and shot rammed "true." Now, with the breech-loading punt-guns of the period all this worry and danger are obviated. In a few seconds the guns can be loaded or unloaded.

The principle on which stanchion guns are rigged is very simple :—a heavy gun carrying 1 lb. or more of shot could not be fired from the shoulder ; the gun, therefore, is fixed upon a rest, on a spring board, and is stayed from recoiling more than an inch or so by a rope-breeching running from the bows, through a ring or a hook on the gun, and back to the bows. The longer the rope-breeching the better the recoil is worked off. A short rope might break, and the same accident would certainly happen, in many cases, if the breeching were slack.

THE BEST FORM OF BREECH-LOADING

Punt-gun is certainly the Snider, since it is the quickest in its working, and very safe. The annexed cuts of Messrs. Tolley's punt-guns will show, however, two different specimens, which I will briefly describe :—

Fig. 1.



No. 1 is a central-fire Snider punt-gun with a simple swivel and breeching ring.

No. 2 shows a central-fire Armstrong punt-gun in loading position, and No. 3 shows it ready for firing. For this gun, each end of the breeching-rope ends in a loop, which is slipped over the projecting breeching-knobs on either side of the barrel. B is the cartridge, over the rim of which the

Fig 2.

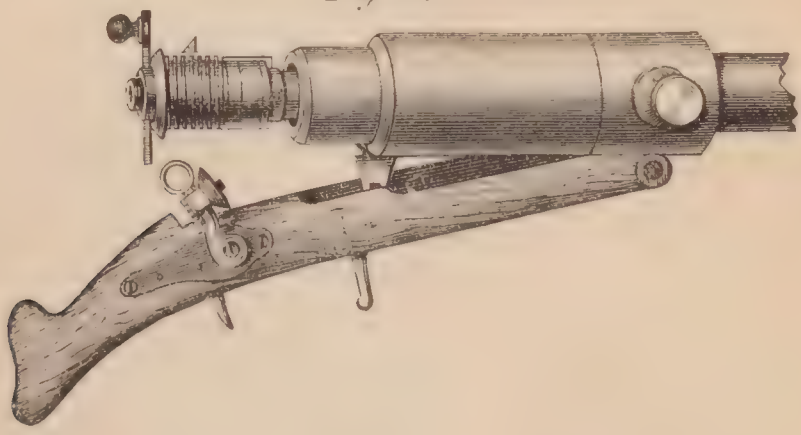
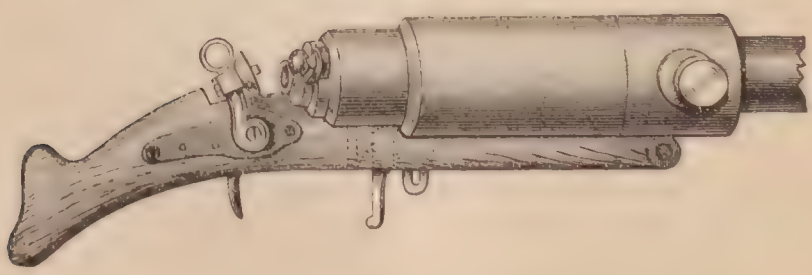


Fig. 3.



two claws of the extractor are plainly shown.

The cartridge cases for breechloading punt-guns are now generally made of steel, with a nipple screwed into the base. As a rule, with each gun, six such cases are sent by the makers, and these cases will last, practically, for

ever. In order to prevent accidents, their respective loads are kept ready in copper-loaders divided into two divisions, one for the powder, the other for the shot, and a brass stopper is screwed over each. Thus, after a shot, a fresh case is loaded with the contents of one of the loaders, the cap is put on the nipple, and the whole affair is ready in a moment.

I append a table showing, at a glance, all details as to bores, weight, length of barrels, loads of powder and shot, and prices, of Messrs. Tolley's punt-guns. Messrs. Tolley's address is Pioneer Works, Birmingham.

MESSRS. J. AND W. TOLLEY'S PUNT-GUNS.

Measurements.			Loads.		Prices,			
							Central-fires.	
Bores.	Weight	Length.	Shot.	Powder	Muzzle-loaders.	Pin-fires.	Snider.	Armstrong.
1½ inch	65lbs.	7 to 8 feet. 7 feet is the ordinary measure.	½-lb.	Same bulk as shot.	£28	£35	£38	£65
1¼ ,,	70 ,,		¾ lb.		35	40	£43 10s.	
1½ ,,	93 ,,		1-lb.		40	47	£54	
1¾ ,,	—		—		—	—	—	

Recoil-frames £5 extra.

The recoil frames are based on Colonel Hawker's plan. The spring being very powerful, never breaks, but the jar is very considerable when the gun springs back after the recoil. To obviate to some extent this jar, either thick india-rubber or leather rings should be fitted to both ends of the slider. The whole frame rests on a swivel—thus obviating the old style of crutches, wheels, and screws, which were always very troublesome.

THE PUNT for the stanchion-gun, if a double-handed one, should be built according to Colonel Hawker's plans and dimensions, which are fully given in his book. There are, however, very few double-handed punts worked with a stanchion-gun now-a-days, except by men with amateurs, and then they only answer well in daytime when sailed, or when the fowl are tamed by hunger and hard weather. Single-handed punts are in far more general use, because they are less visible; they are also lighter, and draw so little water as to practically be available almost at all times of the tide, and can be hauled up the "hards" or over the flats readily by the punter, even if he is unaided. The punt should be decked forward, and the gun so placed that its muzzle come to within two inches or so from the bows. Were the muzzle to protrude beyond the bows, it might by some mischance get choked with mud when the punter is rowing in the dark along mud banks, when, of course, the gun might burst when fired. Besides the forward deck, there ought to be washboards all round the little craft, and the cripple-gun, hanging under the starboard washboard, ought to have a piece of tarpaulin hanging over it so as to protect it from rain or salt-water spray.

The ammunition-box is placed astern so as to "trim" the boat, but the puntsman who places his shoulder to the gun-stock must be careful that neither the box nor anything else stands in the way of his feet when he fires, for in such a case the recoil would certainly break his collar-bone. When firing a light load one may shoulder the swivel-gun, but when firing above half a pound of shot I would deprecate it, and let the recoil-frame or the breeching-rope stand the brunt. Indeed, some swivel-guns are built with curved stocks which preclude any shouldering.

With such guns the end of the stock is placed under the right arm-pit, the left hand is placed on the top of the stock so as to raise or depress the gun if necessary, and the right hand pulls the trigger-string or chain. In that way no accident can occur to the punter's shoulder, since when the recoil takes place the stock glides harmlessly under his arm.

By the way, the trigger should never

be pulled directly, as is done with ordinary guns, for, with punt-guns the recoil is so sudden and so violent at first, even with the best of breeching or apparatus, that the hand would certainly be broken.

Mr. Folkard's Punt for single-handed stanchion-gunning is of the following dimensions:—

Length over all . .	17 ft.
Breadth amidships .	2 ft. 10 in.
Ditto at bottom . .	2 ft. 8 in.
Depth at bow . . .	4 in.
Ditto at stern . . .	8 in.

Such a punt should be, according to Mr. Folkard, clench built, with a round floor (not too round for steadiness), and of fir and elm. Oak is too heavy. The spring, fore and aft, should be 1½ to 2 inches. The forepart should be covered in, from stern to cross-piece, with a very thin scantling of deal, a front cross-piece being also placed under it, about 2½ to 3 feet from the stern. The fore-rest for the gun should be a simple copper screw, with a small crutch in which to lay the gun, and this small screw should be received in a female screw let into the fore cross-piece. Sometimes, however, for light swivels the screw and crutch are replaced by a stoutish sort of billiard-rest, with which the puntsman can alter the line of the barrel at will and very quickly. The stern cross-piece receives the spring swivel, which is rendered firm by the aid of the check-piece. For full details, Mr. Folkard's and Colonel Hawker's books should be procured.

Punt Powders are of four different sorts. The A.T.P. is the smallest-grained quality, and answers well with small swivel-guns. The T.S. No. 8, is often mixed with the A.T.P. quality, for guns firing 1 lb. or upwards of shot. The L.G. is very coarse, and alone, or mixed with A.T.P., is a powerful powder. The R.L.G. is the largest-grained used for sporting purposes. It is only fired with very large stanchion-guns.

The Shot for punt-guns is of five grand numbers, viz., B., BB., BBB., BBBB., and L.G. For easy shots, B and BB are the best-sized to use. For heavy shots the two next sizes, and for long range, wild geese, &c., L.G. is the most suitable, but a great deal depends on the gun.

The Dress of the Gunner should be exceedingly warm and of whatever colour he likes, provided he, when getting into his punt, if in day-time or by moonlight, puts over all a light drab frock with a hood. If by starlight a clean linen or white flannel frock with a hood must be slipped over all. The hands should be protected with long sheepskin gloves with the wool inside, and the feet and legs ought to be particularly well covered. Usually the shooter wears two pairs of long and warm hose, over which a pair of Flushing-coating trousers are drawn, and the legs are then inserted into long sea-boots. A white waterproof long coat will be desirable in case of rain.

Management of the Stanchion-Gun and Mode of Shooting.—It need not be said that it requires a certain amount of practice in order to perfect oneself in the use of such a cumbrous weapon as a stanchion-gun, but the wonderful attractiveness of the sport induces the sportsman to exert all his faculties to the utmost, and, as a rule, with moderate luck, his efforts are fairly rewarded. When the birds are heard—if in the night, or seen with the glass—if in day-time, the puntsman should at once ship his oars, and lying down on his stomach cock the hammer of his gun, seize his paddles and work up to the flock. He needs only peep over the gun'ale now and then to see if he is holding on a fair course, and the less he looks up the more likely will he escape detection. The moment the birds cease feeding he should stop—they are listening; as soon as they resume "charming" or feeding, he may resume his setting. When he gets within range he should keep his eyes along the barrel, and be ready to fire at the slightest sign of the birds rising.

Hoopers and Geese generally crowd together before rising. If they do not notice the gunner's approach, a slight rattle of his foot will bring them together.

Brent Geese are more easily got at nowadays by drifting to them than in any other way, unless they are in small flocks, when they can be "paddled" to. They generally put their heads together to listen when alarmed. When chasing the cripples the punter should at once row to the heaviest sea, so as to intercept the

liveliest of the lot, who are sure to go there, and he should fire at them with the cripple-gun as soon as he has the chance.

THE DIVERS give no notice whatsoever, but by paddling away from the punter and turning their heads quickly, from side to side, in order to keep their eyes on his motions, and, at the flash—down they go. Ducks and widgeon do not always crowd together before taking to their wings. The teal spring up without any warning, but if not fired at, they settle again within sometimes a comparatively short distance. Wounded ducks dive at the flash very quickly, but they soon are exhausted, if sharply pursued.

A CRIPPLE NET, about two feet in diameter, and on the same principle as a landing-net for fish, is indispensable for picking up the dead and wounded birds—specially from a yacht.

PUNTING has of late made an extraordinary extension—many gentlemen having taken to the sport with great keenness. In fact, once tried, it is a sport which is never willingly abandoned, the sight of so many birds within one's reach being quite intoxicating, and those who have never had the opportunity of witnessing the sport can form but a very faint idea of its extraordinary attractions.

SECT. 5.—THE SHOOTING-YACHT AND SAILING-BOAT.

The modern shooting yacht is, internally, built just the reverse of the ordinary cruising yacht, *i.e.* the owner's cabin is forward and the men's sternmost. The stanchion-gun is worked over the bows, and there should be plenty of room in the hatchway for the sportsman to move about, so as to be enabled to fire either right ahead or a broadside, according as the birds present themselves. Cutter-rigged ten or twelve ton yachts are generally used along the British coast, but regular foreign-going shooting-yachts intended for the coast of Holland, &c., are much larger. The gun (with recoil apparatus) works on a pivot fitted directly in the centre of the fore-deck between the bows. The yacht should draw but little water and be as stoutly built as a pilot-boat, so as to stand any weather almost; and it should be copper-bottomed, as it will have to meet ice-floes in the course of its career, and it might be damaged by such, if nothing protected its planking. In such yachts, wildfowl-shooting is truly a treat, for the shooters have every convenience on board, and if a good look-out be kept by the men, the sportsmen need only turn up when birds are about. The fittings of such yachts vary so much that there is no average price to be relied upon, but £300 ought to secure a first-rate ten-tonner fit for British service. Shooting-yachts usually carry one or two punts stowed away on deck against the bulwarks.

OPEN SAILING BOATS or HALF-DECKERS are frequently employed to carry stanchion-guns, but they are cold and comfortless boats. They usually tow a punt or dinghy astern for cripple service.

THE STANCHION-GUNS for sailing yachts are usually of the heaviest calibres, carrying 1 lb. or 1¼ lb., or even 1½ lb. or more, of shot. For open sailing-boats, they rarely fire above 1 lb.

For the best available localities for shore-shooting, punting, and yacht gunning, I would refer my readers to "Wildfowler's" "Shooting and Fishing Trips" (a new edition of which has just been issued, in one volume, with illustrations); his "Shooting, Yachting, and Sea-Fishing Trips;" and his "Shooting Adventures and Canine Lore," all of which works are published by Chapman and Hall, Piccadilly, London.

DEER-STALKING—A QUIET SHOT.

CHAPTER X.

DEER-STALKING.

Sect. 1.—The Red Deer and Roebuck.

The Stag, or Red Deer (*Cervus elaphus*), is the largest of the British deer, of which three species are known —viz., the red deer, the fallow deer, and the roebuck. The first is considerably the largest; and the following dimensions — given by Mr. Scrope in his interesting work on deer-stalking— will afford some idea of his great size when full grown :—

	ft.	in.
Height at shoulder	3	11¼
Girth at shoulder	4	7
Height from top of head to fore-foot	5	6
Length of antler	2	6
From top of antler to ground .	7	10

Gross weight, 308 lbs.

In colour, the stag is usually of a reddish-brown, with blackish muzzle, and mane mingled with grey; the inside of the thighs and flank being lighter, and approaching to a fawn colour.

Nomenclature, according to the Devonshire Hunt. — Deer under one year are called *Calves;* till three, the male a *Brocket*, and the female a *Hearst;* at three, the male a *Spire*, and the female a *Hind;* at four, a *Staggart;* at five, a *Stag;* at six, a *Warrantable Stag;* and after this, a *Hart.* The female does not breed till three years old, and has only one calf.

Horns.—The male is known from the female by having a pair of horns, which are shed yearly, and change in form with every succeeding year. Each fully-developed horn has a *brow*, *bay*, and *tray* antler, and *two points* also on the top. The first three are termed the *rights;* the two points, the *crockets;* the horn itself, the *beam;* the width, the *span;* and the rough part at the junction with the skull, the *pearls.*

Age known by the Horns. — The Brocket has only small projections, called *knobbers*, with small *brow antlers;* the Spire a *brow antler*, and half-developed *beam*, called *uprights;* a Staggart, brow, tray, and uprights; a Stag, brow, bay, and tray, with one horn crocketed and the other single; a Warrantable Stag has brow, bay, and tray antlers, with crockets on both horns. After this no rule can be given, as the horns constantly vary in all

points: but if they have three points, the harts are called royal.

Age known by the Slot.—This is the proper name, according to the laws of *venerie*, for the tread of the deer, which, in the hind, is much narrower and longer than that of the stag, especially at the toe. In the warrantable stag, the heel measures fully two inches; if more than this, and deeply indented into the ground, he is a large heavy old hart; and such usually bring up their hind-feet to the impression made by their fore-feet.

Other Terms used in Venerie.—The deer's haunt is called his *lair;* where he lies, his *harbour;* where he rolls, his *soiling-pool;* where he breaks through a fence, his *rack;* if he goes to water, he *takes soil;* if headed back, he is *blanched;* if he lies down in water, he is said to be *sinking himself;* an unwounded deer is called a *cold hart.*

Habits of the Red Deer.—He is rather a delicate animal, and bites close like a sheep; requiring an enormous range of pasturage to afford him such a choice and change as shall keep him in health. The stags rut about the end of September, or beginning of October; and this period is exceedingly short as compared with the sheep and goat, only lasting a single week. The stags show the change by a peculiar swelling of the neck, where they throw out a ruff of long hair; and at this time their flanks are tucked up, from their refusing food and their tendency to fret. During the rutting season they are very restless, and roll constantly in peat mosses, becoming often perfectly black with the soil that adheres to them. They are now wholly unfit for human food, and are never sought after by the sportsman, who selects, in preference, the more backward stags and the hinds, which are then just coming into season, but seldom yet fat and of good flavour. The rutting stags are exceedingly pugnacious, and terrible battles are constantly taking place for the possession of the females, a whole harem of which are the spoil of the conqueror. These battles are often fatal to one or both combatants; and many cases have even been known of two stags being so firmly locked together by their horns as to be worried to death; an instance of which is commemorated by Landseer's celebrated pictures, "Night" and "Morning," in the first of which the harts are fighting fiercely, and in the second they are seen lying dead, with their horns locked together, so as to be perfectly inseparable. The period of gestation in the hind is eight months, the fawn being dropped in May or June; the fawn is left during the day concealed in the heather, and is only suckled at night. The suckling-hind is poor and tasteless, and should be allowed to escape from the rifle-ball. Hinds which do not breed are called yeld-hinds.

The Age of the Red Deer is said to be three times that of man; and there is strong evidence for believing that this popular belief has some foundation in fact, as many very old men have known particular deer all their lifetime, and have had the same knowledge handed down to them from their fathers, and even their grandfathers. No rule can be drawn with perfect accuracy from the period of gestation, which was considered by the old naturalists to indicate the exact duration of life in all animals, because we know so many exceptions as to falsify it altogether. Thus the horse and the ass go with young the same time, and even breed together, yet the ass is nearly twice as long-lived as the horse. Again, the camel lives twice as long as the horse, and yet goes with young one month less. There is, therefore, no reason why the deer may not live to the age usually allotted to him by the foresters, though nothing is more difficult than to get at reliable facts bearing upon this subject.

The Direction of the Deer's Flight is almost always up-wind, in order to be forewarned, by their acute sense of smell, of any approaching danger. There is great difficulty in changing this instinctive course, but it may be done under certain circumstances. The hinds are always the most vigilant, and are set to give notice to the harts. The hinds are also always put first in the run, except in cases of great danger, when the master-hart comes forward and boldly faces it.

The Timidity of the Red Deer is very remarkable, and he can scarcely, except by compulsion, be induced to remain near the haunts of man. Every movement alarms him, from the cry of the plover to the flight of the hill-fox,

He is more especially timid when he cannot make out the exact nature of the danger which threatens him; while, if he sees his great enemy, man, even comparatively close to him, he is much more composed, though still wary, and never confused or flurried.

When pressed, however, the stag stands at bay, and in this position is a very dangerous antagonist for both dog and man, as he will defend himself with horns and hoof till the last extremity. By choice, he selects water, if pursued by dogs, as his instinct tells him that in this element his superior size and length of leg will give him a great advantage. Here few dogs can pull him down, and when they attempt to reach him by swimming, they soon fall victims to the sharp points of his formidable horns.

In Driving Deer, they always follow in single file, like the Red Indians of America, and only break this rule when hard pressed. When fat, they are soon blown, and cannot go any pace up-hill whilst in that unwieldy state, which only lasts till the approach of the rutting season. They seldom attack man, unless they are surrounded and hard pressed; but in the rutting-season, instances have occurred where savage and disappointed stags have attacked intruders upon their domain.

The Haunts of the wild Red Deer in Great Britain are confined to the most retired and inaccessible parts of the Highlands of Scotland, to the Quantock Hills of Somersetshire, and to some of the adjacent ranges of Devonshire; but in addition to these may be mentioned the deer confined in certain parks, as Windsor and Richmond Parks, &c.; yet these can only be considered as deer in confinement. In Scotland only are they stalked, being reserved for hunting in the west of England.

The Roebuck (*Capreolus capræa*) is also an inhabitant of some of the Scotch deer forests, but it is chiefly confined to the wooded parts, not choosing the mountainous and open situations like the red deer. In size, it is not to be compared to its larger congener, being only 24 inches in height. As, however, it is rarely stalked, for its own sake, and as it is more calculated for showing sport before a pack of dwarf harriers, I shall include it among the objects of hunting rather than of shooting.

Fallow Deer are never stalked, being shot either on horseback or from an ambush in a tree or hut.

Sect. 2.—The Deer Forests.

The Deer Forests are confined to Scotland; and are only to be obtained by those whose purses are long enough to pay large sums for them. Indeed, it is seldom that any are in the market, as the fashion of the day has made this sport more eagerly sought after than any other. The chief deer forests are in Sutherlandshire, Ross-shire, Inverness-shire, Aberdeenshire, Argyleshire, and Perthshire.

Sect. 3.—The Telescope.

Every deer-stalker, whether a principal or an assistant, should be provided with a good telescope; and I believe, by general consent, Ross of London is considered the best maker. He is, however, rather expensive, and good glasses by other makers, such as Solomons or Steward, may be obtained for half the price. But it is really astonishing to see what a difference there is between a first-rate glass and an inferior one. With the former the eye takes in everything as distinctly as if close at hand, whilst with the latter there is often a haze, which leaves it in doubt whether certain objects are red deer or rocks, or perhaps only heather in oddly-shaped masses. If therefore money is no object, Ross would be the maker I should advise, and I am quite sure that in every other respect he will give perfect satisfaction. The telescope should be worn in a case slung round the right shoulder, and should be carefully kept from scratches by drawing the slide well over the glass after using it.

Sect. 4.—The Gillies or Hillmen.

Nothing leads more to success in deer-stalking than the having two or three thoroughly good and experienced hillmen to aid and assist in the work. In most cases the whole management is confided to them, because they, from long experience, are better able to know the exact currents of air in the confined valleys, and also can foretell the precise effect of all their stratagems. Each man should be born a forester, and should have imbibed his knowledge of his trade with his mother's milk. He should be patient, sober, and hardy—

civil and obliging, anxious to show sport, and at the same time should be jealous of his master's prowess and interests. Such men are scarce, and should be valued accordingly.

Sect. 5.—The Rifle.

In the Choice of the Rifle much consideration should now be given; for the recent improvements introduced in France and England have effected quite a revolution in its form and powers. Under the old *régime* few rifles were sighted beyond 200 yards; and one that would put half-a-dozen balls at that distance into the crown of a hat was considered perfection, if only it would put ball upon ball at 60 or 100 yards. But since the introduction of match rifle-shooting we have changed all that, and are not content with less than a three-inch group at the first-named distance. To effect this, initial velocity has been sacrificed; and the same gun which will please the match-shooter will be rejected by the sportsman, who does not care to have any unnecessary allowance to make for the passage of the game while the ball is travelling from the muzzle to it. Hence until very recently a different amount of twist, and therefore a different ball, have been adopted in each case: the match-shooter selecting a ball $2\frac{1}{2}$ diameters long, which requires an entire twist of the rifling in twenty inches to keep it from upsetting; while the sportsman uses a much shorter ball, and a twist varying from a turn in six feet to one in eight or nine feet, according to fancy.

A discovery made a few years ago has, however, caused another revolution, because it has been found that by using a particular form of ball with a large charge of powder, great initial velocity is given, while the shock to the animal shot at is increased in consequence of the hollow ball spreading out when it enters the body, and also breaking up more or less into fragments. This is the modern Express Rifle, as made by Purdey of London, Rigby of Dublin, Henry of Edinburgh, Gibbs of Bristol, and indeed by all gun-makers of any note. To show what can be done with these rifles, I insert here an account of the performance with them of Mr. John Rigby of Dublin, published in the *Field* of Jan. 29, 1870, which may be fully relied on as a truthful exposition of their powers:—

"An opportunity was recently offered to me by the proprietor of a Scotch forest to shoot a number of hinds (the forest being overstocked), and I gladly availed myself of it, in order to see with my own eyes the comparative effect of different rifles, and to judge more accurately of the exact proportion and weight of bullet most suitable for the purpose. On the first day I had not many chances, as on the beat chosen few deer were in good condition. Towards sunset, however, a good herd was met, and the first that came in view fell with a shot through the head. Scarcely was a fresh cartridge in than the rest of the herd were seen to cross a ridge about 100 yards behind us, when a right and left from the shoulder brought down two more. This gave one more than could have been bagged with a muzzle-loading double or breech-loading single, and two more than would have fallen to a muzzle-loading single. On the second day I tried better ground, but found the deer wilder. I was out about five hours, and got twelve, several of which were shot at distances over 200 yards. Towards evening, after a long stalk, we came on a herd of about thirty, which we could not get near to. I accordingly opened fire at 250 yards, taking a full fore-sight, and three were down and one wounded before the herd got out of sight in a hollow. On following them up, the wounded deer was sighted, and fell to a shot behind the shoulder. On this occasion the Express system gave me the range, which probably I would not have hit off with a higher trajectory, and the breech-loading gave me two more deer than I could have secured otherwise. On another occasion, earlier in the day, I got a good hind out of a herd 300 yards off. She was struck too low, but lagged behind, and so was easily stalked and bagged. During the remaining days of my stay I was among the cliffs on the seaside, trying to secure some of the wild goats, which afford excellent sport, the he-goats especially going up the steep face of the hill in a style which the pursuing biped cannot hope to imitate. On my way to and from the haunts of the goats, I got in all ten more deer, making up the total bag to 28, and three goats. I could have shot many

more of the latter, but only sought to secure good heads. The rifles used were a double central-fire breech-loader of ·450 bore, 26 in., 9¼ lb., carrying 4 drachms; and another ·500 or 40 bore, same length, 10 lb., and carrying 4½ drachms and a bullet nearly an ounce in weight. The result of all this shooting proved that for red deer and all lesser game the ·450 bore rifle, with a properly proportioned bullet, has ample power. It never passes through even a goat, but expands after striking, and inflicts a most deadly wound; and its accuracy and low trajectory enable the shooter to place the bullet well in the majority of cases. The blow inflicted by the half-inch rifle is certainly heavier. In one instance a deer struck rather far back (at a distance of 180 yards) was knocked down by the blow, but immediately got up and made off, until stopped by a second bullet near the shoulder. The half-inch would be more effective in stopping a charging tiger or a bear; but for shooting deer, antelopes, ibex, &c., the ·450 bore, which need not exceed 9 lb. weight, seems perfection; and I have proved beyond a doubt that, even at 300 yards, my bullet retains sufficient velocity to cause it to expand on striking, and kill as effectually as at the shorter ranges.

"JOHN RIGBY.

"Dublin, Jan. 26, 1870."

As a further explanation of this performance, and in reply to queries by another correspondent, the following will also be read with interest:—

"1. 'Did any deer, and how many, get away wounded?' I can say with certainty that only one that was hit escaped, and we had no dogs with us. In this instance I had aimed at the head, and the deer dropped at once and lay while I shot two others, as mentioned in my former letter. On the forester's approach she got up, staggered forward, and plunged down a steep hollow lined with copsewood. We followed, and viewed her twice, but each time she seemed stronger than before, and went away through the covert so fast that I could not get a shot. It was nearly dark, so we were obliged to desist. This deer was either grazed and stunned only, or hit too low. The incident proves nothing as to rifles, for the largest spherical ball through a deer's head, under a certain line, will not stop it. No other deer out of twenty-nine that were struck in four days' shooting escaped, but several required a second shot when the first was not well placed. These invariably fell behind their fellows in such a way that they were easily approached and killed. In this respect I found no difference between the small and the larger rifle. The latter carried a ball nearly as heavy as your correspondent uses, and half a drachm more powder; yet it was after receiving this bullet in its side, and being knocked over by the shock, that a deer got up and went a hundred yards or so at a good pace; it then stopped, and was easily approached and finished. The fact is that, whether with spherical or Express bullets, a deer, 'unless struck in a vital part,' will go for a time; but, inasmuch as the Express bullet causes a more extensive injury and greater hæmorrhage, it ought to diminish the chance of ultimate escape. It is, however, true that in some instances the system has been carried too far, and, for the purpose of securing a very level flight and low recoil, sufficient weight of bullet and sufficient penetration for quick killing have not been retained.

"2. 'Did the expanding bullet spoil the venison?' I am scarcely in a position to say, as I only saw two of the hinds afterwards, and these were shot through the ribs and little damage was done to the meat. If struck in the haunch, I am sure the Express would do much more injury than a spherical bullet.

"3. 'Were the distances measured or guessed?' Guessed first, and paced afterwards. I was a good deal astray at first, but the forester's judgment was generally correct. After a day or two, I as often under as over-estimated the distance. The result of a shot beyond 200 yards is a sufficient check on the estimate of distances. Thus, at 250 yards it was necessary to take a full fore-sight with my rifle. If I had over-estimated, and the distance were 200 yards or less, I should have missed over. No Express has a 'practically flat trajectory to 300 yards.' I found it most useful to observe the relative size of the head of my foresight and the body of the deer. It helps often to correct an erroneous notion of distance, particularly in a mist.

"I am sorry, after answering his questions, to have to object to a sentence or two in your correspondent's letter (otherwise most fair and reasonable), in which he insinuates that I was guilty of the unsportsmanlike conduct of 'opening fire at 250 yards' (my own phrase) 'into the brown of a herd of hinds,' &c. (his own invention.) I never said or did so. Every deer shot was selected by the forester, with the aid of his telescope, as suitable, and never shot at until separate from the rest. The forest was certainly overstocked, and the owner wished that about thirty-five hinds should be shot. My time was limited, and, if I had spent it in stalking, and refusing all shots but those which would be considered within a 'sportsmanlike' distance by a lover of spherical balls, I should certainly not have got nearly the number of deer I did. Finally, as to recoil, I felt none with the 9¼ lb. rifle (52-bore), and very little with the 10 lb. rifle (40-bore); but I yield the palm in this respect to the maker of your correspondent's rifle, which, weighing only 8½ lb. and 16-bore, carries as heavy a charge as either of the above, without 'any recoil whatever.' In all humility, I confess that this is beyond my skill.

"JOHN RIGBY.

"Dublin, Feb. 9, 1870."

It will thus be seen that the deer-stalker has a choice between the old muzzle-loading rifle, the ordinary double-grip large bore breech-loader, the single breech-loader, which may be obtained to load at the rate of 60 per minute (Soper's), and the Express rifle as described above. It is well known to all those who have shot at game as large as the deer, that it is very important to give sufficient shock to the nervous system to cause the fall of the game quickly, and before there has been time to escape. I should, on this account, strongly recommend the Express rifle, which moreover has to recommend it its moderate weight, and more especially its low trajectory, making the correct estimate of distance of comparatively little importance. Most deer-stalkers of experience, I believe, now use this kind of rifle.

The cost of the Express rifle is only a trifle more than that of the ordinary one, the increase mainly depending upon the extra weight of metal and strength of workmanship, necessary to withstand the large charge of powder used. The prices are—Double Express breech-loading rifle, with case complete, 45 to 70 gs. Double ordinary breech-loading rifle, with case complete, 40 to 65 gs. Single rifles (Westley-Richards, Henry, or Soper), 10 to 18 gs. Others at lower prices.

SECT. 6.—THE DEERHOUND.

The last accessory to deer-stalking which I have to describe is the DEERHOUND, which is used to retrieve the deer after they are wounded by the rifle; for it often happens that, though fatally wounded, they do not fall at once, but run some distance, and finally even stand at bay with a ball in some vital part. A dog, therefore, is wanted possessed of great speed, power, and courage, and capable of holding the deer by the ear or throat, if once he can get firm hold of either of those parts.

THE OLD SCOTCH DEERHOUND possessed all these requisites in perfection, and his feats have been handed down to us in song and prose. I have taken some pains to ascertain the exact breed of these dogs; and the only conclusion that I can arrive at is, that they are identical with the rough, Scotch greyhound; *but, having been kept for a particular purpose, they differ from those dogs in their mode of running.* No one can say, by looking at the two breeds, which is the greyhound, and which is the deerhound; but the moment they are slipped, either at the hare or deer, a remarkable difference in the style of going is apparent, which detects the courser of the hare from that of the deer. They are equally fast, but the deerhound gallops with his head in the air, and his body raised off the ground, ready for a spring at the throat or ear, or even the thigh of his prey; while the greyhound, with his head close to the ground, lies down *ventre à terre;* and he is also prepared to pick up his game, not to pull it down. This difference is so remarkable, that I was assured by Mr. A. Graham, the highest authority on the subject of rough greyhounds, that in their ordinary play you may at once detect the two varieties, though in

kennel it would be utterly impossible. Now, although such a difference as this is quite sufficient to incapacitate each dog for the purposes to which the other is applied, still it is only of such a character as would be gained or lost in a few generations. There is not the slightest doubt that greyhounds, even smooth ones, might be bred with all the requisites for the sport in the highest degree; but the rough coat is desirable to resist the cold and wet which would cripple a smooth dog while waiting for his master's shot. Mr. Scrope gives the following dimensions as those of Buskar, a celebrated deerhound belonging to Capt. M'Neill, of Colonsay:—Height, 28 inches; girth, 32 inches; running weight, 85 lb.; of a black-muzzled red or fawn colour. He ascribes to him the following attributes, in the highest degree, viz.:—speed, strength, size, endurance, courage, perseverance, sagacity, docility, elegance, and dignity. He was used solely, or chiefly, for coursing the deer; but those of the same breed which are in existence have tender noses, and run either by view or scent. This strain, however, is so scarce that it is almost impossible to procure one of the true old breed, and the deer-stalker therefore has no resource but to breed for himself, using such crosses as will be most likely to suit his purpose. In the present day there is little difficulty in getting moderately good dogs to begin with, and the breeder must then trust to his own management, or that of his servants, for the result.

Sect. 7.—Qualities Necessary in the Deer-Stalker.

It may readily be supposed, that for the pursuit of deer-stalking a hardy frame and plenty of pluck in the stalker are required. These qualities are indispensably necessary, but in all other points he may vary as much as the average of men are seen to do. The *model* deer-stalker, however, should be of good proportions, moderately tall, narrow-hipped to give speed, and with powerful loins and well-developed chest for giving endurance and wind. No amount of fat should be allowed; indeed, the deer-stalker ought to be in as good training as the racehorse or greyhound. The foot should be sure, and the eye keen and long-seeing, as the telescope cannot always be applied to that all-important organ. He should be practised in running stooping, in crawling on his belly, or on his back by means of his elbows and heels; and should care neither for fatigue, nor cold, nor wet. The nerves should be good, for the excitement produced by this sport is such as to render unsteady the hand of all but those who are of the phlegmatic temperament. "Dutch courage" is not desirable, but "Dutch phlegm" will here serve in good stead. The bodily powers are not the only ones which should be well developed, for the brain should be as active and energetic as the body itself. The red deer is as cunning an animal as any alive, and to circumvent him all the resources of the mind of man must be called into play. The stalker must be full of plans and resources, yet cautious in putting them into execution, for many a well-matured scheme has been frustrated by some thoughtless act on the part of the schemer. Great control over the feelings is absolutely essential; for the giving way to the exultation of hope, or the depression produced by fear of the loss of a shot, will generally cause that which is most to be apprehended. Above all, temperance must be practised—no shaking hand or flinching eye will serve the purpose of the stalker; nor will the parched throat or the perspiring skin avail him when rushing up the hill-side or through the winding valley. In fact, strict training, in all its details, is required; and the more it is carried out, the more complete will be the success of the practiser of its disagreeable duties.

These qualities are, however, only required in the man who really stalks his own deer, like the celebrated Captain Ross and his sons. Most deer-stalkers content themselves with obeying the directions of their gillies, and when these men know what is wanted of them, they generally contrive to suit the stalker. The deer are also much more accustomed to man than of yore, and being also fond of turnips and corn, with which they are fed in severe weather, they, like the pheasants of our day, are sometimes so tame as to follow their feeder rather than to fly from him. Driving also has largely taken the place of stalking; and I could mention more than one name belonging to moderately-

successful deer-stalkers whose bodily frames are manifestly not calculated for much fatigue.

THE DRESS OF THE DEER-STALKER should be light and elastic, yet tolerably warm. For these purposes, the Scotch twilled-plaid is the best for the coat and vest, while the lower garments may be of somewhat stronger texture, yet still of wool. The head should be covered with a close-fitting cap, and the shoes should be studded with strong nails, to enable the foot to take secure hold of the slippery stones found in the burns and among the heather. Knickerbockers are undoubtedly the best cover for the lower limbs, inasmuch as they leave the knees free for climbing or creeping. With these strong woollen stockings are worn, and if these are of proper materials, no further protection is required for the legs. The colour of all should be sober and natural; grey, or a mixture of black and white, being as good as any, since it accords well with the granite rocks which are so common in the haunts of the deer.

SECT. 8.—THE THREÉ MODES OF STALKING.

Thus, provided with glasses, rifles, gillies, and deerhounds, the stalker now has to commence operations on the red deer, which may be shot in three different modes,—1st, by quiet stalking; 2nd, by stalking in quick time; and 3rd, by driving.

QUIET STALKING.—The following is the mode of conducting this species of stalking as described by Mr. Scrope:—One or two stalkers getting on their horses, proceed to the edge of the deer forest, where they leave them and are joined by two or three gillies and a brace of deerhounds in slips. The first point is to ascend the most likely mountain to its top, and that will be the one which commands the glens and hill-sides upon which the deer are most likely to be at that particular time. Having reached its summit, the stalker, or one of his men, should cautiously raise his telescope over its brow, and, applying his eye, should sweep the whole range presented to his view with deliberate caution. As soon as the deer is discovered, an attempt must be made to approach him, without being scented, seen, or heard; and this is well depicted in the following scene, which is extracted from Mr. Scrope's book with some few abbreviations and omissions. A hart is descried in the distance, and Tortoise (Mr. Scrope) thus speaks to his friend and pupil, Lightfoot:—"A noble fellow he is; I can just see his horns, and the point of his shoulders. It is a glorious chance; for once in the burn, we can get within a hundred yards of him, and that is near enough in all conscience. Here, Lightfoot, look at the fine fellow; pull off your cap, and rest the glass on the stone." "Not the semblance of a deer can I see, but I'll take your word for it; I dare say he is there, since you say so. And now explain to me how you mean to get at him; communicate, my good fellow; for it seems, by all your caution, that even at this distance you dare not show a hair of your head." "Creep back there behind the hill, whilst I mark the very spot in the burn which is opposite his lair. Well, now, I will tell you; we must go all round by the east, beyond yon hill, and then come up at the notch behind yon two hills, which will bring us into the bog; we can then come forward up the burn, under cover of its bank, and pass from thence into the bog again by a side wind, when we may take his broadside—and thus have at him; so let us make the best of our way. It would be quite easy to get at the hart, if it were not for the hinds on the top of the hill; but if we start them, and they go on belling, the hart will follow them whether he sees us or not; get your wind he cannot. Maclaren, you will remain here, and watch the deer when I have fired. Sandy, follow you at a proper distance, with the dogs; and come you along with us, Peter, and take the rifles. And now, my lads, be canny." The party then advanced, sometimes on their hands and knees, through the deep seams of the bog, and again right up the middle of the burn, winding their cautious course according to the inequalities of the ground. Occasionally the seams led in an adverse direction, and then they were obliged to retrace their steps. This stealthy progress continued some time, till at length they came to some greensward, where the ground was not so favourable. Here was a great difficulty; it seemed barely possible to pass this small piece of ground without dis-

covery. Fraser, aware of this, crept back, and explored the bog in a parallel direction, working his way like a mole, while the others remained prostrate. Returning, all wet and bemired, his long, serious face indicated a failure. This dangerous passage, then, was to be attempted, since there was no better means of approach. Tortoise, in low whispers, again entreated the strictest caution. "Raise not a foot or a hand; let not a hair of your head be seen; but, as you value sport, imitate my motions precisely; everything depends upon this movement; this spot once passed successfully, we are safe from the hinds." He then made a signal for Sandy to lie down with the dogs; and, placing himself flat on his stomach, began to worm his way close under the low ridge of the bog; imitated most correctly and beautifully by the rest of the party. The burn now came sheer up to intercept the passage, and formed a pool under the bank, running deep and drumly; the leader then turned his head round slightly, and, passing his hand along the grass as a signal for Lightfoot to wreath himself alongside of him, said, "Now my good fellow, no remedy—if you do not like a ducking, stay here; but if you do remain, pray lie like a flounder till the shot is fired. Have no curiosity, I beg and beseech you; and speak as I do, in a low whisper." "Pshaw! I can follow wherever you go, and in the same position too." "Bravo! here goes then; but if you love sport, do not make a splash in the water, but go in as quiet as a fish, and keep under the high bank, although it is deeper there—there is a great nicety in going in properly; that is the difficult point. I believe it must be head foremost; but we must take care to keep our heels down as we slide in, and not to wet the rifles. Hist! Peter, here, lay the rifles on the bank, and give them to me when I am in the burn." Tortoise then worked half his body over the bank, and stooping low, brought his hands upon a large granite stone in the burn, with his breast to the water, and drew the rest of his body after him as straight as he possibly could. He was then half immersed, and getting close under the bank, took the rifles; the rest followed admirably; in fact, the water was not so deep as it appeared to be, being scarcely over the hips. They proceeded in this manner about twenty yards, when, the ground being more favourable, they were enabled to get on dry land. "Do you think it will do?" "Hush! hush! he has not seen us yet; and yonder is my mark; the deer lies opposite it to the south—he is almost within gunshot even now." A sign was given to Fraser to come alongside, for they were arrived at the spot from which it was necessary to diverge into the moss. In breathless expectation they now turned to the eastward, and crept forward through the bog, to enable them to come in upon the flank of the hart, who was lying with his head up-wind, and would thus present his broadside to the rifle when he started; whereas, if they had gone in straight behind him, his haunches would have been the only mark, and the shot would have been a disgraceful one. Now came the anxious moment. Everything hitherto had succeeded; much valuable time had been spent; they had gone forward in every possible position; their hands and knees buried in bogs, wreathing on their stomachs through the mire, or wading up the burns; and all this one brief moment might render futile, either by means of a single throb of the pulse in the act of firing, or a sudden rush of the deer which would take him instantly out of sight. Tortoise raised his head slowly, but saw not the quarry. By degrees he raised himself an inch higher, but Peter plucked him suddenly by the arm and pointed. The tips of his horns alone were to be seen above the hole in the bog—no more. Fraser looked anxious, for well he knew that the first spring would take the deer out of sight. A moment's pause, when the sportsman held up his rifle steadily above the position of the hart's body; then making a slight ticking noise, up sprang the deer—as instantly the shot was fired, and crash went the ball right against his ribs, as he was making his rush. Sandy now ran forward with the dogs, but still as well concealed by the ground as he could manage. "We must louse a dog, sir, or he will gang forrat to the hill." "Let go both of them; it will be a fine chance for the young dog; but get on a little first and put him on the scent—the deer is so low in the bog that he cannot see

him." Fraser now went on with the hounds in the leash, sinking and recovering himself, and springing from the moss-hags, till the dogs caught sight, and they were slipped; but the fine fellow was soon out of the bog, and went over the top of the Mealown. On following over the hill, the voice of the hounds broke full over the stalkers, and they saw the magnificent creature standing on the narrow projecting ledge of rock within the cleft, and in the mid course of a mountain cataract; the upper fall plunged down behind him, and the water coursing through his legs, dashed the spray and mist around him, and then, at one leap, went plump down to the abyss below; the rocks closed in upon his flanks, and there he stood, bidding defiance in his own mountain hold. Just at the edge of the precipice, and, as it seemed, on the very brink of eternity, the dogs were baying him furiously—one rush of the stag would have sent them down into the chasm; and, in their fury, they seemed wholly unconscious of their danger. All drew in their breath, and shuddered at the fatal chance that seemed momentarily about to take place. Of the two dogs at bay, Derig was the most fierce and persevering; the younger one had seen but little sport, and waited, at first, upon the motions of the older, nay, the better soldier. But his spirit being at length thoroughly roused, he fought at last fearlessly and independently. Whenever the deer turned his antlers aside to gore Tarff, Derig seized the moment to fly at his throat; but the motions of the hart were so rapid, that the hound was even compelled to draw back, which retrograde motion brought him frequently to the very verge of the precipice; and it was probable that, as he always fronted the enemy, he knew not, or, in the heat of the combat, had forgotten, the danger of his situation. At this stage it was necessary to act speedily; and Tortoise having at length gained a spot which commanded a view of the stag, prepared to pour in a final shot. Three times the rifle was raised, but each time the aim was abandoned from fear of wounding the dog or missing the deadly spot. At length an opening; the crack was heard faintly in the din of the waterfall—the ball passed through the back of the deer's head, and down he dropped on the spot without a struggle. The dogs now rushed forward and seized him by the throat, and were obliged to be choked off. The men came cautiously on, and began to lift the huge animal out of the water, two at his fore, and the same number at his hind quarters. At last they laid him on the grass, then plunging the long knife into his throat, and opening him for the purpose of gralloching him, his head was bent back on his shoulders, a black flag was tied to his horns to scare away the ravens, a little gunpowder was shaken over him, and he was left to be sent for on the next day with the aid of the forester's pony. Such is the account of stalking this animal in quiet style; let us now see the nature of the second mode adopted.

Stalking in Double-Quick Time.—This is practised upon a somewhat different principle to quiet-stalking, and is intermediate between that species of sport and the driving of the deer, which is only practised on rare occasions, and for high and mighty personages. Both these latter plans disturb the deer so much that they would, if often adopted, scare them, and drive them all off to other forests; and therefore quiet-stalking is usually preferred. The quick mode is practised by sending one, two, or three gillies (after the discovery of the deer by means of the glass, as before) to such points as shall induce the deer to move off towards the sportsman, who, when forewarned of their approach by the signal of the hill-men, rushes upon them as they pass a certain point most favourable for the purpose, and fires his rifles, furnished to him one after another by the attendant. Two or three points are here of great importance: first, that the gillies sent on should only allow the wind to convey their scent to the deer, and should not actually show themselves to their sight; secondly, that the leading hinds should always be suffered to pass before the rush is made, because, otherwise, the herd would stop short and return the way they came, or up some side ravine, instead of passing by the expectant stalkers. Great experience and tact are necessary in the gillies; and, after all, upon them more than upon the principal depends the success or failure of the attempt. It is all very well to fancy that they are acting under orders, but, even

according to Mr. Scrope's showing, they are obliged to use their own wits, and to have recourse to fresh expedients on every change of direction taken by the deer. No signalling can be carried on, because they are out of sight of the party and of one another; and all must act independently, though still in combination, for a specific object—viz., the *gentle* compulsion of the deer towards a spot near which the stalkers are lying in wait. Mr. Scrope's description of a scene in which this mode was adopted is quite as characteristic as that which I have already extracted. Its great length, however, must prevent my doing more than to give a part of the narrative. The gillie, Maclaren, has been sent off about half an hour, and Tortoise and Lightfoot are waiting behind a projecting rock, with the deer-hounds and rifles, attended by Peter. Lightfoot *loquitur*:—"What beautiful creatures! They are all standing up, and gazing at the summit of the hill. How stately the stags look, with their jutting necks and towering antlers! Are you sure they are not elks? By Hercules! I think they are. Now they are moving forward to the hind in advance, which you seem to have such antipathy to. What in the world makes them shift their quarters?" "Why, Maclaren is nearly opposite to them, but at a great distance above, behind the swell of the hill; and, doubtless, has just shown the top of his bonnet over the sky-line; but they are all going wrong, and do not seem inclined to accommodate us." "They are not much alarmed, I think, for now they are standing still, and the hind has walked back a few paces, and is gazing up the hill again; the others seem to watch her motions, and to be guided by her judgment, whilst the harts appear to give themselves very little trouble about the matter." "No, the lazy rascals! but we may rouse them yet. Yes, they are alarmed, or more properly speaking, suspicious. They have that sort of discretion which makes them run away in cases of danger; but you can never frighten them out of their wits with so small a force as ours. They are deliberately trying to make out what is going on, before they decide upon the direction of their retreat, and are too proud to fly without evident cause. But, just keep your eye upon them; Maclaren will not let them off thus: he will make a push for it at any rate." And so it seems he did, for in a few minutes they turned aside, and came a little way down the hill, gazing more towards the south. "By Jove, they are turning! Capital! Well done, Maclaren!" "Doubtless, when he saw the deer going southwards, he slipped back behind the hill, ran like an antelope, and then came in again over the sky-line, and partially showed himself more in front of them. I may as well tell you, that if the hill-man had come down right upon them in the first or second instance, and endeavoured to drive them as one drives sheep, they would immediately have raced away straight south, right up the wind, and have soon been out of our cast." Peter now pressed his master's arm, and pointed: "Did you no' see yon parcel of hinds—these towards the shank of our hill? They canna choose but join them; and they will come, but it will be low doun." And now the gillie, who had a clear view of all these things, began to set to work in earnest. He passed forward rapidly, still out of sight of both parcels of deer, till at length, when he came sufficiently forward, he dashed down the hill in full view, shouting, hallooing, and hurling stones down the mountain with all his might—going to and fro as the deer shifted—slipping, clambering, and tumbling in such perilous places as would have endangered the life of a mountain goat. The hinds last mentioned, which were opposite them on Ben-y-venie, collected and whirled about, much admiring what all these strange noises might portend. Now had the decisive moment arrived, when the thing must terminate either one way or the other. Whilst this was doing, the stalkers were preparing for their work. Tortoise pressed his friend's arm—"Now then, or never! Creep back quickly, and prepare for action; for, by Herne the hunter, they are coming!—low, low, for your life! We must get on to that large stone, and they will all come into our very mouths. Now then, forward! Take this rifle, and hold well at the best antlers when time shall serve; be steady, and fire well forward, taking care not to drop the gun when you pull the trigger." The clatter of hoofs was heard, as they were picking their way obliquely along the rocky ridge; but

how uncertain are all the chances of the chase—instead of coming on, they turn away. "Come along your best pace, Harry, for the hinds are startled, and our parcel is racing up to them; keep you above me, which will save you ground; and Peter, do you stalk the deer, and I will stalk you, which will give me a pull also. We will make a push for it yet." In pursuance of this arrangement, Fraser peered down at the deer's horns, over the ribs of the hill side, ducking, skipping, and running, so as to keep out of their sight, and nearly alongside of them; the riflemen above keeping parallel to him, and dressing according to his motions. The deer, however, were steady to their tactics; for they were resolved not to come over the steep part of the hill, when, by losing the wind, they might come unawares on an enemy; thus they came, rapidly advancing towards the point of the hill where the slope was so open and gradual that they could see a long way in advance, and consequently could not be suddenly surprised. Tortoise now changed his tactics, and turned suddenly to the right, going rapidly over the hill in a new direction; for as the herd had never seen him, nor any of his party, he judged they would remain, for some time at least, on the round swell of the hill below, which they were now approaching. Here Lightfoot was obliged to give up, and remain behind, but his absence was not noticed by Tortoise in the heat of the advance; after a short time, however, he again followed behind. And now Tortoise and Peter had reached the crags on the opposite side of the hill towards the west. Here was an absolute precipice, and large angular stones were lying down it with their edges uppermost. Happy was the foot that did not slide down on their sharp ridges, and charmed was the leg that was not either cut or broken by them. Tortoise had forgotten his companion, so completely was he absorbed in his occupation. The struggle now was to get under the hill on the side opposite to that where the deer were crossing, so as to arrive there in time to take them as they passed over the boll of it, still preserving the wind. Arrived at length at this desired spot, breathless, flushed, and covered with perspiration, they crept forward and wound themselves through the heather, till, from behind a small knoll, they saw the deer feeding forward very leisurely, but still restless, and with their sentinels looking back towards the east. Tortoise now thought of Lightfoot left behind. "Here is a glorious chance," said he, "and I would not have him lose it on any account." At this moment he was descried approaching along a very precipitous and difficult path. Davy was sent back to assist him, and at length succeeded in bringing him up. Fraser, who had been peeping from time to time through a bunch of heather, now pressed Tortoise's arm, and whispered, "Be ready—they are coming." Both were lying flat on the heather, with the rifles on the ground, on one of which Tortoise had his hand; but as yet he did not raise it. They lay still as death, till some hinds passed within an easy shot: next came a four-year-old hart, which was suffered to pass also; the better harts were following him in the same direction, and the points of their horns were just coming in sight when, lo! Lightfoot, who had that moment come into the ground, fired at the small hart which was galloping away gaily, and gaily did he still continue to gallop. The injudicious shot struck woe and dismay into the soul of Tortoise. Up he sprang, and dashed forward, but it was only to see an antler or two vanishing out of sight under the swell of the ground; still he went on as fleetly as ever he ran in his life, cutting off to the point where he expected the deer would reappear in crossing the bottom. Here he stopped short, and taking a deliberate aim, the peculiar swash was heard which tells that the bolt has struck its mark. The whole party now lay quietly down, and Fraser was set to examine the herd as they passed up the opposite height, and to keep his eye on the wounded hart. This is the surest way of recovering him; for, if you press him, and he is not hit deadly, he will get forward into the middle of the herd whilst his wound is fresh, and run with the other deer in such a manner as will most probably occasion you to lose him; but if thus managed, his wounded part has time to stiffen, he slackens his pace, and generally falls out from the rest of the herd, if badly wounded; whilst, if only slightly wounded, you must lose him at any rate. "Now tell me, my way-worn and much-injured friend, what made you shoot at that

little deer?" said Tortoise as soon as he had time to cool. "A little deer! a little deer! *Haud credo*, I thought he was an enormous monster." "I must reply, as Master Dull did to the erudite Holofernes:—'Twas not a *haud credo*, 'twas a pricker. Extremely juvenile he is, but you will soon learn to distinguish better." A dog was now slipped, and the deer finally retrieved, much as in the last-described chase. Here again, the chief part is performed by the gillies. Tortoise and Lightfoot play the subordinate part, except in being permitted to use the rifle, which is only another species of genteel butchery. However, this must be said *sotto voce*, because, while deer-stalking is so fashionable, it will always be prized, for such is invariably the case in all societies.

Driving Deer.—There is very little difference between the principles on which this sport is conducted, and those adopted in the quick-stalking. The chief points in which they are unlike is the number of hill-men employed, the number of deer driven, and the number of stalkers placed in ambush. In all these respects deer-driving has the advantage of a considerable superiority—that is to say, if sport is to be measured by the number of its victims, as is the case in most instances. The pheasant-shooter and the wildfowl-shooter are both discontented with a small bag; and by a like desire for blood the deer-stalker is stimulated when he hopes for the death of tens, twenties, or hundreds, instead of single victims to his skill. In deer-driving on the large scale a great number of men are sent out, and by commencing at the extreme boundary of the forest, at stated distances apart, and gradually approaching the pass up which the deer are to be driven, all those within this circle are pressed on till they arrive at the point desired. In this progress the men have become much closer together, and in proportion as the deer accumulate and the difficulty of pressing them on has increased, so has the number of men, relatively to the ground covered, increased also; thus, supposing the semicircle first included was 10 miles in diameter, then the semicircle itself would be 15 miles in extent, and would require 120 men in order to give one to each furlong. But when the pass to which they are to be driven is only half a mile across, the semicircle would be reduced to three-quarters of a mile, giving one man to every 11 yards; and if only a quarter of a mile, one man to every 5½ yards. Such a *cordon* would be difficult to break, one would think; but, nevertheless, the deer, when alarmed in front, often wheel round and charge the drivers. Such an incident is well described in Sir Walter Scott's "Waverley;" and the scene given in Cooper's "Smuggler" is also a good representation of one of those grand affairs. To these novels and to Mr. Scrope I must, however, refer the reader who wishes to follow out this sport. It is one only adapted for princes; and those who are admitted to its pleasures should peruse the spirited descriptions presented by the above novelists, and by that practical sportsman Mr. Scrope. Most of us would, I have no doubt, enjoy the diversion, valuing it the more for its rarity; but for any other attraction, I confess I look in vain; excepting always the wild and picturesque scenery which its prosecution presents to the eye.

The Grand Scale of Driving, which is described above, is however not absolutely necessary, and in modern days a good drive is often carried out with only eight or ten men, whose experience is so great as to enable them to induce the deer, with the most absolute certainty, to take a certain line terminating in a narrow pass. In fact, such is the plan adopted in very many cases where either the powers or the wills of the party having possession of the forest are at a discount. Great numbers of stags whose heads are paraded in the South as having fallen to particular rifles have been thus obtained, and thus it will be clearly understood that there is deer-stalking and deer-stalking.

PART I.

THE PURSUIT OF WILD ANIMALS FOR SPORT.

BOOK II.—HUNTING.

CHAPTER I.

MATERIEL NECESSARY FOR HUNTING IN GENERAL.

Sect. 1.—The Game to be Hunted.

Hunting may be defined to be the pursuit of certain wild animals, by means of a pack of hounds following by scent. The animals hunted are—first, the red deer; second, the fallow deer; third, the roebuck; fourth, the fox; fifth, the hare; and sixth, the otter. The badger and martin are also hunted in some districts, but never, as far as I know, by a regular pack of hounds; and their pursuit will not therefore come under the above definition.

The Red Deer (*Cervus elaphus*) has been already fully described, at page 126, under the chapter on Deer-stalking. It is hunted in the West of England in a wild state, and is also sometimes turned out before a pack of stag-hounds, after being deprived of his horns if a male, and taken to the meet in a deer-cart.

The Fallow Deer (*Dama vulgaris*) is usually met with in our parks, where large herds are generally congregated, and form those pleasing groups which add so much to the effect of that beautiful scenery peculiar to Great Britain. It differs from the stag in size, being less; and in the form of the horns, which are also smaller, and flat instead of being round; they are likewise broader, palmated at the ends, and better garnished with antlers. The red and fallow deer never mingle together, even when confined in the same park, avoiding one another most carefully, and never breeding together. The rutting season is a fortnight or three weeks later in the latter; and the males at that time are not nearly so furious and excited; hence they are better suited for our parks and the neighbourhood of man. They breed at two years, and bring forth one, two, or three fawns. They come to maturity at three years, and their average age does not exceed twenty. Fallow deer are easily tamed, and may be readily induced to follow their keeper into

any crowd, which they speedily get accustomed to. At the rutting season, however, they are sometimes troublesome, and should then be carefully confined, or they may injure children or infirm persons, more especially those who show a fear of their horns. In England there are two varieties of the fallow deer—the spotted deer, said to be of Bengal origin, and similar to the AXIS or CHEETUL (*Axis maculata*), and the dark self-coloured brown, which is supposed to have been introduced from Norway by James I., who was devoted to the chase, and especially to stag-hunting. Fallow deer, when hunted, are always turned out of a cart; and their horns are generally removed when the buck is the object of pursuit.

THE ROEBUCK (*Capreolus capræa*) was formerly common throughout England, but is now chiefly met with in Scotland, north of the Forth. Its extinction in the southern parts of this island is owing to its dislike to confinement, not bearing even the walls of our parks. It will not admit of being tamed, and is very savage and morose when in close confinement. It is much less than the fallow deer, being only 24 inches in height; and it is even more elegant in its shape and movements. It is not gregarious, but lives singly or in pairs, and drives off its young at nine or ten months of age. The horns are short and small, divided into three small branches, not palmated, and they are seldom more than a foot in length. This deer is seldom hunted. Unlike the stag, which is found on the bare mountains, it prefers the thick underwood of large forests; and it is only on rare occasions that it can be driven into the open lowlands, and hunted with a pack of hounds. The rutting season is at the end of July or beginning of August, and the young are produced about the end of May or beginning of June, so that gestation lasts about ten months—a much longer period than was believed until recently. The investigations of Professor Bischoff, in Germany, confirmed by observations made in Scotland, show that the female goes with young nearly twice as long as was formerly supposed, but that the development of the fœtus is so slow during the first four or five months, that it is practically unobservable in animals killed before December. Two fawns are usually produced at a birth, but occasionally three. The term of life is about twelve to fifteen years.

THE FOX (*Vulpes vulgaris*) has been already described as a species of vermin; in which capacity its destruction has been permitted and even enjoined. Here, however, he reappears as the cherished object of the sportsman's care; and no animal is so jealously watched and tended as he is in the best fox-hunting districts. Coverts are made on purpose, often at great expense, and kept undisturbed solely for his use. His ravages in the pheasant-preserve and hen-roost are overlooked, and the man who injures him is considered to have wounded the feelings of the whole hunt, and sullied his own honour. Nothing but this universal *esprit de corps* could have saved the fox from annihilation. Like the wolf, but for this protection he would long since have been among the things that were in England; and the glorious sport he gives us would be impossible, for want of the necessary animal to hunt. Foxes are found of two or three varieties in the hunting districts, besides the hill-fox of Scotland, which is well calculated for showing sport before hounds if the ground would permit of *horses*. These varieties are—the greyhound-fox, a large, tall, and fast animal, of a greyish red; the bull-dog fox, thicker and darker coloured, with a heavy head; and the smaller, redder, and more compact fox, which has been, and is still, imported from France and Germany. All these several foxes have the end of the tail black when young, and becoming white in after years. I have already enlarged on the preservation of foxes and the means by which the keeper may satisfy both the pheasant-shooting and fox-hunting tendencies of his master. The fox burrows underground in what is called his "earth;" and the vixen produces from four to six cubs at a birth, once a year—generally in April or May. When cubs are turned down in the summer, they require regular feeding and looking after for some time, as they are unable to get their own food from a want of parental teaching. In process of time, however, instinct prompts them, and they gradually learn to provide for themselves. A want of this precaution has

caused the loss of many litters of cubs, procured at great expense and trouble.

THE HARE (*Lepus timidus*) is too well known to need a full description. For hunting purposes she is well suited, because her instincts are so remarkably well developed in showing her how to foil the pursuit of her enemies. She doubles and returns upon her trail in a way which seems to prove the existence of reason; and sometimes even swims down a river for a considerable distance to escape her pursuers when hard pressed.

There is a species peculiar to Scotland, the SCOTCH HARE (*Lepus variabilis*), and also an IRISH HARE (*Lepus hibernicus*). The former is somewhat, and the latter much, less than the English hare; they are both, however, fast and stout; but the mountain hare of Scotland, which is the one alluded to above, is not well calculated for hunting or coursing, having instincts very different from the ordinary Scotch or English hare.

THE OTTER (*Lutra vulgaris*) has already been described, at page 13.

SECT. 2.—HOUNDS, AND THEIR MANAGEMENT.

THE VARIOUS KINDS OF HOUND were formerly much more distinct than at present. Nothing can be much more unlike the old southern hound or bloodhound than the diminutive beagle; and almost the only point of resemblance is the exquisite power of scent which both possess. At present, hounds may be divided into—first, bloodhounds; second, staghounds; third, foxhounds; fourth, harriers; fifth, beagles; and sixth, otter-hounds.

THE BLOODHOUND, SOUTHERN HOUND, or TALBOT (see chapter on the Varieties of the Dog), is still met with in England, but it is almost entirely superseded by the foxhound or harrier for the purposes of the chase. In parks, however, it is occasionally used, for singling out certain deer, and running them down, when they are to be taken for the purpose of hunting or for stall-fattening, or for removal. Here great caution is required, as the bloodhound is a dog which can seldom be kept under command, and usually no whip or rating will prevent his gratifying his desire for blood when he has the opportunity. His nose, however, is so perfect, and he has so completely the power and the instinctive desire to keep to the hunted deer, that he will follow it through the whole herd, and pass them by regardless of their attractions. He has been also used for hunting sheep-stealers and thieves of all kinds, and must then be muzzled. Besides his intractability, he is also comparatively slow, and the fox or stag hunter of the present day would not require a thoroughbred horse to keep pace with his movements, but would vote him a "potterer," and would be more inclined to ride a steeple-chase home than to watch his slow hunting. In size, he is the largest of the hounds, being about 25 or 26 inches high at the shoulders, and often weighing 70 lb. The colour is generally black and tan, with a great preponderance of the red—which is, moreover, more yellow than red; but in the Talbot and Sleuth-hound the yellow and black-pie was the usual colour. The head is very handsome; ears large, soft, and pendulous; jowl square, and flews well developed; nose broad, soft, and moist; and eyes lustrous and beautifully soft when in an unexcited state, with the haws visible. This dog is nearly identical with the Talbot and old southern or sleuth-hound, of which we have now no pure representative; but they may be said to be one variety, and to be the stock from which the staghound, foxhound, harrier, beagle, and otter-hound have been all bred.

THE STAGHOUND AND FOXHOUND may be considered as the same, the former being only a larger variety of the latter; but though originally descended alike, they are not now bred from the same strains indiscriminately. As with the old deerhound and greyhound, so with these hounds, although their organization and appearance are identical, yet from being entered and kept for many generations to different game, they are to be readily distinguished by their style of hunting. Nevertheless, no one could say where the line that divides them passes, and it would be impossible to distinguish a large spiry foxhound from one of the smallest and lightest of her Majesty's beautiful pack. The staghound, therefore, may be considered as a large foxhound, or the foxhound as a small staghound; the one devoted to the hunting of deer, the other to that of the fox.

THE ORIGINAL STOCK of these two

varieties of the hound is undoubtedly the southern hound, bloodhound, or Talbot. But in process of time, when the country was cleared from forest, and more speed was required, and when the horse could be used in order to keep pace with that increased speed, a faster hound was sought for, and the old-fashioned, deep-toned, and careful hound was bred, which has been immortalized by the verse of Somerville and the prose of Beckford. These were faster than the southern hound, but still slow compared with the modern foxhound. In those days the cold scent of the morning drag was hit off by the hound, and the fox was hunted up to his retreat in the woodlands before he had time to digest his nocturnal meal or to sleep off his fatigue in procuring it. Hence, nose was all in all; and the fox being full of food, could not go the pace which he now does at eleven or twelve o'clock, eight or ten hours after his belly was filled with the fat capon or the wary old "rooster," as our transatlantic friends denominate the dunghill cock. It is not fully known by what crosses this increase of speed was obtained; the subject was formerly enveloped in much mystery; and masters of hounds were imbued with a very different spirit to that which prevails among them in the present century. But there is strong reason for believing that the greyhound, and most probably the old Scotch deerhound, were had recourse to, either directly or through the northern hound, which was a decided cross of the southern hound with the deerhound. In her Majesty's pack most of the hounds are fully 26 inches in height, and the bitches at least 24; they have broad short heads, with straight hind legs, well furnished thighs, and sterns more feathered than is often seen in the ordinary foxhound. They have very delicate noses, can hunt a cold scent, and yet with a blazing one they run breast high, but not quite so fast as some of our packs of foxhounds when the scent is good. The deer's foot-scent is not good; but he leaves a strong body-scent which falls to a certain height, according to the state of the air, and is readily owned by the staghound. The endurance of this dog is great, but not perhaps equal to the foxhound, as is to be expected from its greater size and weight. Few packs of staghounds could bear the roadwork which most foxhounds undergo besides their runs, which are sometimes two or three in a day; they also escape altogether the work in covert, which is most trying to the lesser hound. Even where wild deer are hunted they are unharboured by slow hounds of the old breed. Consequently, the actual chase is all that is committed to the staghound, together with the roadwork to the meet (generally pretty near the kennel); and the homeward journey, which, however, is often a long and dreary one, but, not as in the foxhound's case, prolonged into the night.

THE MODERN FOXHOUND is a most extraordinary animal; fast almost to the same degree as a slow greyhound, he has extraordinary stoutness and power of endurance, with a hardy constitution. To these invaluable qualities he adds a good nose, not quite equal, however, to a cold scent; with great docility, when considered in conjunction with his courage and dash. With regard to his origin there is strong reason for believing, as with the staghound, that he is the old southern hound crossed with the greyhound, with perhaps a dash of the bulldog; but here, again, all is conjecture, and we can only guess at his origin from his form and peculiarities. Beckford describes the model hound as follows:—"Let his legs be straight as arrows; his feet round, and not too large; his shoulders back; his breast rather wide than narrow; his chest deep; his back broad; his head small; his neck thin; his tail thick and bushy—if he carry it well so much the better. . . A small head, however, as relative to *beauty* only; for, as to *goodness*, I believe large-headed hounds are in nowise inferior. . . . . The colour I think of little moment, and am of opinion with our friend Foote, that a good dog cannot be of a bad colour."—p. 49. To this must be added a point of great importance, which has been insisted on by "Nimrod"—namely, the length of the back-ribs, which, as in the horse, should be well developed, and firmly fixed to the hips by strong muscles. "Nimrod" also very properly insists upon length of thigh and good strong stifles, without which speed cannot be long maintained. This description will avail equally well in the present day, although written more than fifty years ago. He also

recommends a middle-sized hound, neither too large nor too small; but, like many other writers on sporting subjects, he does not further define what he means by giving the middle height of the foxhound, or even the extreme ranges to which they go. I think that 24 inches for dogs, and 22 for bitches, will be found to be about the outside height which will be desirable for fast and open countries; while in strong woodlands, with much work in covert, an inch less will be desirable, because the large hound has more difficulty in following out the runs traversed by briars, &c., than the dog a size smaller. The quickest pack I ever saw, and that which worked in covert the best, was Lord Redesdale's, when he was master of the Heythrop country, which were not more than 23 inches, dogs, and 22 inches, bitches. This pack, however, went like birds, and flew the stone walls as well as a greyhound. Indeed, the contrast with the late Earl Fitzhardinge's larger hounds, which then hunted the same district during part of their season, was, I think, much in favour of the little ones. They were certainly the most beautiful pack, to my taste, which I ever saw; and so unusually "suity" as to please the eye in that particular in a way which no larger hounds could be expected to do. It is always easier to draft large hounds down to a certain size, than to attain uniformity of height in large-sized hounds; consequently a small-sized pack can be kept much more level than a larger one; and the difference between the sexes being also less marked, they look better when the dogs and bitches are hunted together.

THE HARRIER AND BEAGLE may be taken together, since they are now bred one with the other so much that it is difficult to say what are harriers and what beagles. The latter is the more specific breed, and may therefore with advantage be first examined. It should be remembered that the hare, unlike the fox, is constantly "doubling," that is, returning upon her track, and thus endeavouring to foil her pursuers; for this reason, an exquisite nose is required, with great patience, and considerable cunning, to meet artifice by artifice. Hence, the harehound must differ from the foxhound in possessing an acuter sense of smell, a slower pace, less dash, and more patience; he must also be able to distinguish a "heel-scent," as he may otherwise return upon the hunted line, fancying he is following a "double" of the hare. One other point, also, is of vast importance—he must "pack closely;" for as the hare so often doubles back, if the hounds are all over the field the chance of foiling the "double" by their own scent is increased when they spread widely. In size beagles measure from 10 inches, or even less, to 15. In shape they resemble the old southern hound in miniature, but with more neatness and beauty; and they also resemble that hound in style of hunting. No scent is too cold for them, and they can work out, in all its windings and foils, that of the most cunning old hare, if allowed time to do it. Nothing is more beautiful than to watch the working of these diminutive hounds, and I trace my first fondness for hunting and the sports of the field to the occasional sight of a pack of them belonging to the father of a schoolfellow of mine, Mr. Harding, living near Dorchester. The extraordinary style of these little beagles I have never seen surpassed; but I fancy there was more in the mode of hunting than in the hounds themselves. They were never lifted, and rarely cast, but left to work out their scent in their own way; consequently their brains were thrown upon their own resources, and very rich those stores certainly were. Often have I seen them apparently consult, and then, without the slightest *external* cause, hit off the scent as if by mutual inspiration, and carry it on without a check for a mile or two. Slow they were, at least so slow that we could keep up on foot by cutting corners, &c.; but at times, with a blazing scent, they would race away from us. I would that I could now catch a view of their graceful forms. The head and ears of the beagle are proportionally much broader, and the ears longer, than the foxhound—very nearly approaching to the bloodhound in development; the legs shorter, and the body bigger and stouter. He is a very hardy little dog, and will stand an immense deal of work. At the two extremes of the beagle subdivision stand the dwarf beagle—a little smooth lapdog, with very long ears, and almost pug nose; and the fox-beagle, resem

bling the foxhound in all but size and dash. The essence of the beagle is the freedom from this quality, and it should never, on any account, be permitted to be displayed. Patience, co-operation, freedom from jealousy, goodness of nose, and Lilliputian dimensions, are, in fact, the essential qualities of the beagle. There is an air about him which the sportsman recognises, but which is very difficult to describe; nevertheless, there it is, and a comparison will soon show it. Besides these, there is the rough beagle, a variety of the rough Welsh harrier, and possessing the old mellow tone of the southern hound. We may, therefore, sum up the varieties of this little hound as—first, the medium beagle, which may be either heavy and southern-like, or light and northern-like; second, the dwarf or lapdog beagle; third, the fox-beagle; and fourth, the rough or terrier-beagle.

THE HARRIER is now a crossed animal, bred in all sorts of ways, and varying from 21 inches down to 15 or 16. He looks more like the foxhound than the beagle, but has some remnants of his old breed in the longer ears, wider head, and stouter body which he possesses. He should, however, have a most delicate nose, even more so than the beagle; for as his increased size carries him faster over the ground, so he is more likely to overrun the scent, and foil it so that he cannot recover it. Some of these hounds, however, have a wonderful power of carrying a scent at full speed, and will race into a hare in such a time as to finish her up almost as soon as found; this, however, spoils sport in great measure, as, by their speed, they prevent all those artifices on the part of the hare which give zest to this otherwise slow amusement. For this reason it is that harriers appear to have as good noses as beagles, though they really have not; for by depriving the hare of scope to double back, by pressing so closely upon her scut, they give themselves much less to do, and have only to work out a straightforward scent. Many huntsmen of harriers now cast forward as if hunting a fox, and with reason too; for as the hare *cannot* double back, she tries all her wiles in a forward or side direction—hence the alteration in the principles called for by the alteration in the speed and style of hunting of hounds. It is, however, in my opinion, an alteration for the worse; and I hope that in future beagles, rather than harriers, will be the hounds selected. From an hour to an hour and a quarter is the proper average time to kill a hare in; she then has a quarter of a mile law all through, and stops and pricks up her ears, and considers, and then doubles and doubles again, and resorts to all sorts of expedients, which try the powers of the little animals behind. The pack, which is shown in the cut hereafter with the chapter on Hare Hunting, was a cross of the beagle and foxhound; they were from 16 to 17 inches in height, could go quite fast enough to keep horses galloping, and give a good account of nineteen hares out of twenty, having indeed killed fifty-one in the season of 1854-5. They were of the late Lord Sefton's blood, and such hounds I should like to see throughout England, kept at little expense, and affording amusement to hundreds on horseback and on foot.

OTTER HOUNDS are nothing more than the old southern hound, kept for generations to the hunting of the otter.

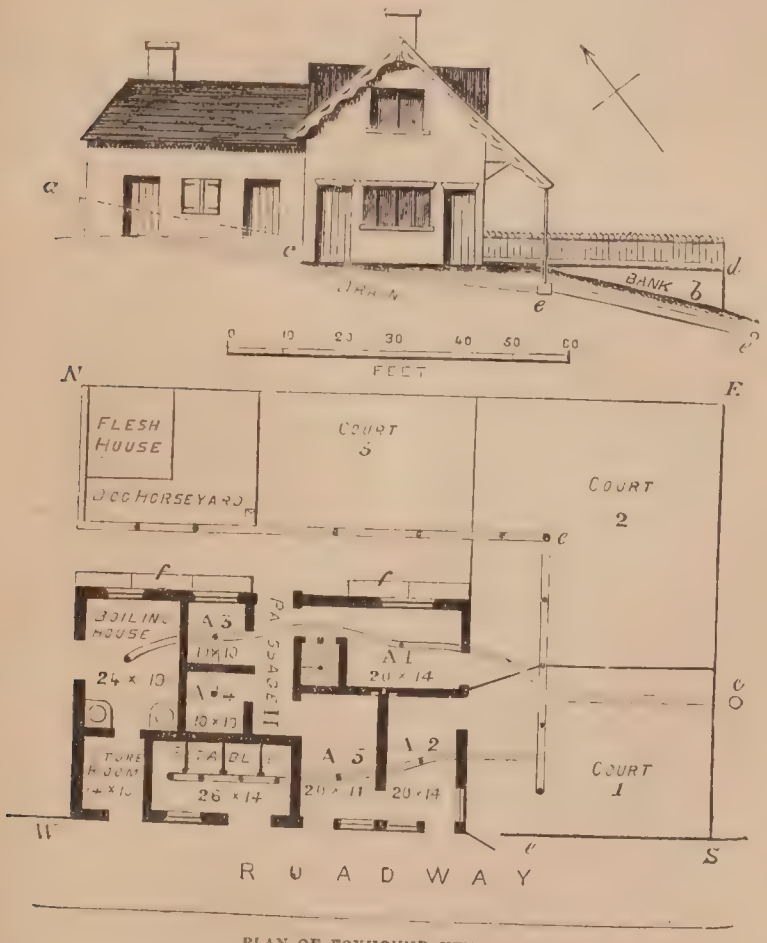
SECT. 3.—CONSTRUCTION OF KENNELS.

THE KENNELS form a most important item in the management of a pack of hounds; and much controversy has arisen on the subject. The chief points of difference in opinion consist—first, in the soil upon which they are built; secondly, on their aspect; and thirdly, on their formation and ventilation.

THE SOIL FOR KENNELS should certainly not be a porous one. Sand is the very worst possible stratum for the purpose, since it absorbs and retains all the excrementitious particles which the dogs must pass whenever they leave their kennels, either in their yards or grass courts. A cold clay is perhaps too much in the other extreme, since it is always accompanied by a raw and damp atmosphere, and is on that account prejudicial to health. Of the two extremes, however, it is, I think, the better; and I should build on clay in preference to gravel. Marl is the best stratum for the purpose, or chalk, which does not absorb to the same degree as gravel.

Either of the last two is well suited to the purpose, and one or the other may be procured in most districts.

THE ASPECT is all-important; sun is necessary to the health of all animals, and is doubly so to the dog; yet an afternoon sun is too hot, and causes the sleeping-room to be uncomfortably warm in the height of summer. A south-eastern aspect therefore should be chosen, well sheltered from the east and north by plantations or hills, but not so much so towards the former direction as to shut out the morning sun. The gently sloping side of a hill therefore which looks to the south-east may be selected, and the kennel built facing in that direction, by which means the drainage will all be carried off out of the way of the yards and sleeping rooms; and the yards themselves may easily be levelled and drained laterally, so as not to interfere with the kennel. This will be better understood by the annexed diagram, in which the dotted line *a b* indicates the



PLAN OF FOXHOUND KENNEL.

old level, and *c d* that of the yards and kennel, with a good trapped drain at *e*, into which both yards and lodging-rooms are washed and drained. By this arrangement the internal parts are kept high and dry, and are cut off from all damp by the drain between them and the open yards. The morning sun has full power, and gives health sufficient for all purposes, whilst in the heat of the afternoon the doors may be thrown open, and the interior is all in shade as well as great part of the yard.

IN THE CONSTRUCTION OF THE KENNEL one grand point is to select materials which will not absorb either the moisture or noxious effluvium emanating from the hound. They should be therefore either hard stone or flints, or well-burnt and hard bricks. Sandy and porous bricks make the very worst walls for kennels possible, and should care-

fully be avoided. Next, as to size and shape :—the former must depend upon the number of hounds ; but, as it is easier to build a large kennel originally than to increase it when once built, it is as well to calculate upon one which will hold forty couple of hounds, the number which will suffice for stag or fox-hunting three or four days a week. For such a pack, the dimensions given in the foregoing plan are sufficient. The essentials as to accommodation are very simple, and consist of—first, the lodging-rooms ; secondly, the feeding-room ; thirdly, the boiling-house ; fourthly, the men's rooms ; fifthly, the men's stables ; and sixthly, the courts. The lodging-rooms should consist of five apartments, three large, and two small—A 1, A 2, A 3, A 4, A 5. A 1 is for the regular pack ; A 2 for the pack drafted for hunting next day ; A 3 for invalid dogs ; A 4 for bitches in season ; and A 5 for those whose room is drying after being washed down. Where a dog and bitch pack are kept separately, one other room, at least, must be set apart for the bitches. These houses should all have benches, raised about 20 inches from the floor, and about 30 inches wide. These should surround three sides of the room, and should have open lattice-work bottoms, with a front edge to them about 4 inches deep, of stout timber, well rounded off. They should also be lined with board, towards the walls, at least 8 inches from the top of the bench. The dimensions of the rooms are indicated in the plan. All should be paved with *glazed* tiles, sloping to the centre, which should have a trapped drain ; and they should be on a foundation of concrete, composed of large cinders or broken bricks, with lime and gravel. When expense is of little importance, all kennels should be built on brick arches, which, after all, are not very expensive, a single brick arch being quite sufficient. These rooms should be from twelve to fourteen feet high, and ventilated by means of three or four trap windows, similar in principle to those in church windows. The traps should, however, be capable of being entirely removed in the heat of summer. One large feeding-room is all that is necessary, but I have not given it in the plan, as I should much prefer an open veranda, running the whole length of the kennel, for this purpose. Here the troughs may be placed, and in the summer time the food cools more rapidly, while, after feeding, and indeed at all other times, the veranda allows the hound to enjoy the shade from the sun, or protection from the rain. The troughs, *f f*, are made with perforated covers, and when these are shut down they form a seat for the men, or a bench for dogs to lie upon, high and dry. The boiling-house may be placed at the end of the building, or at some greater distance, if desirable ; but it should be tolerably near, on account of the increased labour of carrying the pudding, broth, &c., from a distance. It should be a room *open to the roof* to admit of the escape of the steam ; and containing two large cast-iron boilers, set in proper brickwork. These boilers should hold from 50 to 60 gallons, and should be kept, one for meal, the other for flesh. In the boiling-house also there should be two or three coolers, 8 feet by 5 feet, and 1 foot deep, in which the pudding or broth may be allowed to cool. This room should also be floored with tiles or bricks ; no concrete is necessary, but a drain must be added, to allow of the blood, &c., from the flesh being washed away. Over one of the three lodging-rooms (A 1) are the rooms of the kennel huntsman, or feeder, who should always be at hand at night, prepared to put down the first symptoms of quarrelling by the voice, or, if necessary, the whip. Opposite the junction of the inner wall of A 1 with that dividing A 2 from A 5 there should be in the feeder's room a small stove or fireplace, fed with air from three air-drains, one of which commences at the bottom of each of the three lodging-rooms. By this plan, when his fire is lighted, a draught is maintained from the lodging-rooms, and the air kept pure there, by compelling the entrance of fresh air from the windows. Over the room A 2 is a meal-room, and over A 5 a hay-loft for the stable adjoining. At the end of the passage, at H, is a foot-bath for the hounds after hunting ; it should be made of Roman cement on brick-work, about four or five inches deep, and filled with warm broth ; a plug easily allows of the escape of the broth after use. As the hounds pass backwards and forwards to the feeding-trough they bathe their feet in the warm broth, which they afterwards

lick off, the tongue finishing the good work begun by the warm broth. A bucket of hot broth mixed with an equal quantity of cold water is sufficient for this purpose. Three courts are in the plan, as follows, viz.:—1, for the hunting-hounds; 2, for the general pack; and 3, for any others, or for feeding. The posts of the veranda stand in these courts; and there should be a trap at the foot of each leading to the drain, for a purpose which every person conversant with the dog will readily understand. There should also be a grass court or paddock adjacent.

The stabling is calculated for four horses, which is quite as many as should be at the kennel at one time, the change-horses being better at the regular hunt-stable; but these three or four horses being done by the kennel-men, are better at the kennel; and in the summer-time the stable is required for the cub-hunting horses, which are seldom more than screws adapted for that purpose. Good hunters would be sacrificed at this time, owing to the hardness of the ground, and the great amount of covert work.

Kennels of these dimensions and construction ought to be put up without much ornamental work, but in a thoroughly substantial manner, for from 200*l.* to 250*l.* according to locality and expense of materials.

Sect. 4.—The Master and his Men.

The Master of a pack of foxhounds, staghounds, or even of harriers, ought to possess the qualities which would fit him for the command of an army in the field, together with that particular knowledge which is essential to hunting. He should be able to keep in good order—first, a pack of high-couraged hounds; secondly, a set of opinionated men, in the shape of Huntsman & Co.; and thirdly, a disorderly field of sportsmen. If, fortunately for him, he is master of his own pack, without the aid of subscriptions, his task is comparatively light; but even then he is often considered to be the property of those who hunt with him; and, if things go wrong, he is pulled to pieces as much as if he were the servant of his followers, instead of their being immeasurably obliged to him for enduring the trouble and undertaking the expense of his establishment. There can be no doubt that a man who undertakes to hunt a country, even at his own expense, is bound to carry out his engagements, because one part of the arrangement is the giving up the country to him; and, while he is in possession, no other master has a right to it. Sometimes nearly the whole of a fox-hunting country belongs to the master—that is to say, the whole of the large fox-coverts; but this is seldom the case, and generally he is dependent upon the permission to draw them, granted as a part of his district. This permission is given on the implied understanding that sport shall be shown, for no man wishes fox-hunting to be conducted in a slow or unsportsmanlike manner; and hence those owners of coverts who have granted leave to draw, have clearly a right of interference; but they are seldom the grumblers; the actual malcontents being generally the sporting butchers, &c., who indulge the field with their presence. If this grumbling happens with the master who keeps his own hounds, how much more likely is it with the master of a subscription pack. He has unfortunately a hundred subscribers, or sometimes more, each of whom fancies himself justified in calling him to account, or in refusing to obey orders, if he has been transgressing the limits which are compatible with the enjoyment of the sport. Yet a field *must* be kept in order; the how? is the problem to be solved, and its solution has puzzled the brains and exhausted the energies of many a high-spirited and well-intentioned sportsman. The master should possess the iron nerves of the "Iron Duke," and yet with these should be joined the polished courtesy of the Earl of Chesterfield. Oaths and imprecations *may* succeed with the self-supporting master, and even then they are better left at home; but these tactics are misapplied with the subscription pack. Nothing but firmness, united with gentlemanly language, has a chance in these days; and their union, when combined with a knowledge of the noble science and good riding, will be sure to succeed anywhere and everywhere. The combination, however, is rare; and there are few men who possess it in full force who will not soon give up their

office in the full knowledge that the same talents applied in a different way will lead to success in the legislature, or in some collateral pursuit. Every master, however, should have a good knowledge of the theory and practice of hunting; and though he may be inferior, in some respects, to his huntsman, who has made it the business of his whole life to study hounds and hunting, yet he ought to know enough to be able to judge whether he is doing right or wrong. If this is not the case, the man will too often exult over the ignorance of the master, if he attempts to interfere; and if he does not in any way take the management, he is the slave of a despot rather than the master of a good servant. However, in all cases the master must undertake to keep the field from overriding the hounds, also from surrounding a covert, and thereby heading a fox back and causing him to be "chopped," from an incapacity to break in face of a lot of chattering cigar-smokers and scandal-mongers, who care little about hunting, and only want to have the pleasure of exhibiting their persons in pink before the young dressmakers of their town or village. These gentlemen must be ranged in their places, or the efforts of the best pack of hounds and the most clever and persevering huntsman will be rendered abortive whenever there is a light scent. With a blazing scent, after once hounds are away, no care is required; but in nine days out of ten, unless the master uses his "Hold hard! gentlemen," pretty unceremoniously, the sport is spoilt, or, at all events, greatly interfered with. Such are the duties of the master in the field which every man, noble or gentle, who undertakes to hunt a pack of foxhounds, takes upon his shoulders. With his kennel duties, if self-supporting, no one whatever has a right to interfere; but if supported by subscriptions, his subscribers have a right to expect that he shall see that their money is properly expended in the use of the meal, &c., for the hounds, and in all other ways. There is a very great difference in different packs in the money spent, amounting to at least 50 per cent.; and this can only be accounted for by the management being good or bad on the part of the master.

THE HUNTSMAN next comes before us, and he, like the master, should be a general out of place; but his duties are not so multifarious, and he has nothing to do with the field, while the master should have the knowledge of a huntsman and also be able to keep his unruly friends in order. In all cases, whether the master hunts his hounds himself or not, he should have a steady man to act as huntsman during the exercise, and in cub-hunting, &c.; also in his absence from business or ill-health. But the regular servant must possess the following qualities: temperance, judgment, hound-knowledge, knowledge of hunting, including the ways of all foxes; knowledge of country generally, and of the particular country hunted; good horsemanship—by which is meant anything but random riding; nevertheless, a huntsman ought, in nine cases out of ten, to be able to get to his hounds; *sometimes* a park-wall, or a river, or canal may interfere, but these exceptions do not often occur. A good voice is also essential, and the more peculiar the better, as the less hounds answer to strange voices, the more successfully the sport will proceed; and, in particular, he should have the faculty of making hounds fond of him. With these requisites, added to a quiet, civil deportment, and a natural liking for the science, a man will always command sport; and in proportion to his success there will be the respect paid him by the field. For a pack of harriers or beagles the huntsman requires much less dash and hard riding, and should be quieter, more steady, and less interfering. His field is generally smaller; the farmers take care that their wheat, &c., are less ridden over, and the hounds have full chance to do their work without being interfered with. An older man is therefore more suited to this place, as he is more required in the kennel than in the field; for if he gets command of his hounds in the former, he will easily manage them in the latter. Indeed, a word from a huntsman is enough with harriers; they turn like lightning, and are, or ought to be, as handy as kittens.

UNLIKE THE HUNTSMAN, IN EVERY RESPECT, SHOULD BE THE WHIPPERS-IN, both first and second; they should both be good horsemen, and may be perhaps a little more dashing at times in their riding than their superior officer—that is to say, that it may be permitted to them to risk a drowning or a bro[ken

neck when certain things are to be effected, which risks the huntsman seldom has occasion to incur. If a hard-run fox is heading for certain earths which are open, woe to the whip who does not risk the breaking of his own neck and his horse's heart in geting to them in time. If hounds are changing their fox, and the hunted one is close before a single hound, or a couple or so, then, at all hazards, the other hounds must be stopped, and the whip's riding must be daring enough to effect his object. He should not, however, think exactly for himself, but should work in a subordinate capacity to the huntsman. There may often be two courses to be pursued, and it is not for him to consider which is the best, but that which the huntsman will consider the best, and that is the one for him to work to. He should always be on the look-out for "riot," and careful to check it in the bud, using a rate, if that will act, and if not, then getting to the rebellious hound directly and "serving him out." No plan is so bad as that of constantly flicking and cutting at hounds; if they do wrong in spite of a rate, then punish them severely; but in all cases try the gentler means first, and if they fail, use the whip with power, but at the same time with care and caution, *as the dog's eye is very easily cut out.* The first whip's duty is chiefly to restrain any wildness in the leading hounds, to stop them, or to check riot; while that of the second whip is to bring up the tail hounds, to drive on those hanging in coverts, and generally to keep the slow hounds up with the pack. The duties of the second whip are very subordinate, and require nothing but a strict attention to plain orders. Nevertheless, he may do harm by over-using his whip, or by a want of activity; but most second whips are ready enough in acting; and as they are generally selected for their good horsemanship, their task is performed with ease and satisfaction to themselves.

The FEEDER is a Jack-of-all-trades, n a subscription pack especially. He as first to look out for and kill the log-horses, and should be able to know what to accept and what reject. Some over-drugged and diseased horses are bsolutely injurious to the kennel, and he hounds had much better live on heir pudding alone than be poisoned ith unwholesome food. Besides this duty, he has to wash out all the lodging-rooms, and mop them dry; to boil the flesh, and make the pudding and broth, and to get the food ready for them, either when returning from exercise or from hunting. It is usual for the feeder to undertake the grooming, &c., of one or more of the men's horses, generally the huntsman's; but sometimes a helper is allowed. In almost all cases the whips do their own horses, and there can be no reason why they should not; then if there is only one horse kept at the kennels for the huntsman, the feeder may well undertake him, as his duties are over when the hounds come in, and he has nothing to do but attend to this horse; whereas the huntsman should himself feed the hounds, and attend to any wounds, &c., which they may have incurred in their day's work. This will take him nearly two hours, including a short interval for his own stomach. The feeder ought to be a thoroughly trustworthy man, civil and obliging, and also fond of hounds. A good deal must be trusted to him; lame and sick hounds must be left in his charge; and if he does not carry out his instructions, many hounds will die or be ruined. If, also, he is not careful in drying the sleeping-rooms before the hounds are returned to them, or if he leaves doors or windows open, in bitterly cold days, from thoughtlessness or carelessness, kennel-lameness or some other form of rheumatism is sure to show itself.

Lastly comes the EARTH-STOPPER, a very important functionary to a pack of foxhounds, but sometimes superseded by the keepers, who engage to stop on notice being given them. In all well-appointed establishments, however, he is still a regularly paid official. His office is to proceed at night, when the foxes are all out feeding, and stop the earths, wherever they are likely to be run to on the following day. If he is a man who knows his business, it is only needful to tell him what coverts will be drawn; but although this is all that is necessary for him to know, yet he should in all cases tell the first whip what earths are stopped, in order that, if the run is by chance different to what was expected, he may know whether it will be needful for him to get forward and head the fox before entering the open earths. After hunting, the earth-stopper should also carefully unstop the

earths, and leave as little trace as possible of his midnight work. If the keepers are to be trusted to do this, they of course easily can: but it is so important to hunting to see well to this part of the arrangements, and disappointment so frequently follows the reliance upon men whose hearts are more often set upon the gun than the hound, that it is much better for the earth-stopper himself to see to this part of his duty. I have certainly seen many runs spoilt from a dependence upon the aid of the keeper.

The Horses of the Men should be good useful hunters, especially those for the huntsman, who ought to be the best-mounted man in the field. It is all very well to say they may be blemished, but so may any hunter. Who cares for blemishes in the hunting-field? Many of our best and highest-priced hunters have had badly-broken knees, and with these drawbacks, or with scored hocks, have fetched 400*l.* or 500*l.* If a man is not well mounted he cannot get to his hounds, and should not be blamed for failing in effecting an impossibility. The whips may be put on half-made horses, because in case of accident their places may be more readily supplied, but the better horses they have, the better they can perform their duties. In hunting three days a week, the huntsman and whips require a fresh horse generally every other meet; and in fast countries the huntsman usually has two out on the same day.

Sect. 5.—Kennel Management.

The Feeding and Kennel Management of all hounds is nearly the same, making due allowance for size. Cleanliness is the great virtue to be practised, and without it no hound can be preserved in health and in perfection of nose. It will be remembered that, for the purposes of the general pack, their lodging-rooms are devoted according to the plan of kennel at page 145. One of these (A 5) has been empty all night, and should have been washed out and have had time to dry by morning. Into this the general pack should be turned the first thing in the morning after giving them an airing in the grass-yard, if dry, or under the veranda, if in wet weather. The feeder should then sweep out their lodging-room (A 1), and after doing so he should mop it out well, leaving it quite sweet and clean, taking care afterwards to dry it as much as possible. This will be ready for the hounds again by eleven o'clock, when in the usual way they may be returned to it, after feeding and exercise. A 5 may next be roughly swept, but not washed; and then, after just walking them into the yard, the hunting pack may be turned into it while their lodging-room (A 2) is being swept and washed out. They will remain there an hour or two, and then should be taken out for half an hour or an hour, according to the work they are doing, when they may be brought home, fed, and returned to their regular lodging-room (A 2). This again leaves A 5 empty, and it may be thoroughly cleansed at any time when the feeder has leisure. Thus, the hounds are never turned into wet kennels, and consequently are not subjected to the chances of rheumatism. With regard to the hour of feeding, it should, as an ordinary rule, be about eleven o'clock for the general pack, and from one to two for the hunting pack, according to the time of meeting and the distance they have to travel. By giving two hours between the feeding-times of the two packs the duties of the feeder are lightened, and he has time to exercise and feed the former on hunting-days without help. In many kennels it is the practice to give a little broth or thin gruel to hounds at night; but even in the case of delicate hounds I do not think it of much use. Some certainly are so delicate that they can scarcely be fed too often; but these are exceptions, and they should be treated as such. Water should always be within reach, and raised above the height of the belly of the dogs, or it will be soiled by their urine. It is best in iron troughs, one of which should be in each sleeping-room and court-yard. In summer the doors and window of all the rooms may be left open, and access to the yards allowed night and day; but in severe weather the doors must be shut, and ventilation only carried on by the tops of the windows and by the air-flue communicating with the chimney of the feeder's room.

The food should be chiefly flesh and meal, with an occasional mixture of vegetables. The flesh is always that of

the horse, to save expense, and should be boiled for hours in one of the iron boilers till it is ready to leave the bone. A great saving of expense is made in the long run by having digesters instead of open boilers; they cost about three to four pounds apiece *untinned*, and will save the difference in prime cost in a single season. This difference is not only in the extra goodness of the broth obtained from the meat and bones (which is, however, at least 15 or 20 per cent.), but also in the fire, which need not be above half what is required for the open boiler. If the digester is used, it should be set like a boiler; and it is a very good plan to screw a pipe in it near the top, which can be led into the drain adjoining, by which means all the disagreeable smell given off from the stale flesh in boiling is carried into the bowels of the earth. This benefits all parties—hounds, horses, master, and men; for all are nauseated by the hot, greasy, and sickening smell of boiling stale meat.

The flesh having been well boiled, may be withdrawn by a fork, and set to cool under the shed of the flesh-house, or in the boiling-house if the weather is not too warm; then taking out one-third, or thereabouts, of the broth, pour it into the other boiler, and fill up with water till nearly half full, in which condition the other is left. Both may then be thickened with meal, which should be oatmeal chiefly, but mixed with coarse wheaten-flour, or Indian-meal or barley-meal, according to the fancy of the master. The first I believe to be the best and strongest for giving the power of standing work; the second very nearly, or quite as good; and the third only fit to fill hounds' bellies, without benefiting them in any other way. Indian meal and barley-meal are usually about the same price; but the former is ten times as good, and has the valuable property of bearing a much greater amount of boiling than the oatmeal, which is not the case either with wheaten flour or barley-meal. Wheaten-flour requires about half an hour to boil; barley-flour, one quarter; Indian-meal, two hours; and oat-meal, about one hour, or nearly so. Hounds will generally thrive best, if hard-worked, upon equal quantities of oatmeal and wheaten or Indian meal; one pound of the mixture being sufficient for each hound. Enough only for two days should be boiled at once; and one-half being made with better broth, the other will serve for the more delicate light-fleshed hounds. Each boiler holding, when half full, about 80 quarts of broth, there will be required the same number of pounds of meal, which will serve 40 couple of hounds two days; if more or less, the quantities must be regulated accordingly. In many kennels as soon as the thickened broth, or stirabout, has boiled sufficiently, the fire is drawn, and the pudding is allowed to cool in the boilers; but by far the best plan is to draw the fire, and then ladle out the stirabout into the coolers, which have been already described in the boiling-house department. Here the meal sets much more rapidly, and has not time to get sour, as it soon does in the summer. I am quite satisfied that, cooled in this way, it forms a much more wholesome, and even a more palatable food, than when suffered to grow cool in the boilers. After cooling it forms what is called "the puddings," and is thick enough to be cut out with a spade. It may always be reduced with thin or thick broth to any quality desired for bitches, invalids, &c.; but for working hounds it should be pretty solid. When they are to be fed, this should be broken up with the spade, and carried into the feeding-troughs, and the meat, after being thoroughly cut up small, should be incorporated with it. By some it is said that the meat is more easily picked out of thick than thin "puddings," but this is a mistake. If thick enough, it is ten times more difficult for the dainty hound to pick out the bits, and he is obliged to eat all as it comes, or none.

In feeding, every hound should be called by his name, commencing with the light feeders, and giving them the best "puddings" in a separate trough. The huntsman—except the general pack on hunting days—should always feed, as he is the best judge of the wants and powers of each hound. Throwing open the door of the room or court where they are, he keeps all in expectation, but not daring to cross the threshold; then, with a decided yet encouraging tone, he calls out the name of each hound intended to share the first trough, thus:

"Wanton! Racer! Wasteful!" &c. &c., generally drawing, at first, six or seven couple. When these have filled themselves, he calls two or three couple more by name, and allows them also to get their fill with the first lot; thus often encouraging the first to take a little extra food through jealousy of the second. When these have also fed they are all sent back, and the third lot, consisting of all the remainder of the hunting hounds, except a few gross feeders, are admitted. These are allowed to fill themselves as far as the huntsman thinks proper, ordering each off as he has had what his feeder thinks right. Then, lastly, the same kind of process is repeated with the general pack of lame and non-hunting hounds, and the gross feeders which are admitted either in lots of eight or ten couple, or all together, according to the fancy of the huntsman; but all called by name, and ordered off in the same way. This last feature is of great importance, as it uses hounds to attend when their names are called in the field, and the slightest word then serves to call their attention to their master's rate. Once a week in the winter, usually on Sundays, some greens, potatoes, or turnips, are boiled and mixed up with the food, and serve to keep the hounds cool and in good general health. In the hunting season, from a quarter to half a pound of flesh per hound per day is sufficient; this is the average, but some take more, some less. The oatmeal should be at least one year old; and the Scotch meal is much better and goes farther than the English. Wheaten and Indian meal need not be so old.

In the summer months feeding may be conducted on a very different plan from this, and the hounds are better divided into a dog and bitch pack, whether such is the hunting division or not. One of the best and most cooling kinds of food is, then, the lowest stomach or paunch of the cow, full of grass half digested. These should be thrown on the grass raw, and the hounds soon tear them to rags and devour them. Properly, each paunch should be given to about six couple of hounds by themselves, but few huntsmen care to take this trouble. This food will suffice for three days a week, given in the morning; and on the same evening, which is the best time for feeding, some cabbages, or turnips, or potatoes should be given, boiled in broth. On the intermediate days thin porridge, not "puddings," may be given, being weak broth thickened with Indian-meal, as the cheapest, or oatmeal, or a mixture of each. Little or no flesh should now be allowed, as the hounds have nothing but walking exercise, and do not gallop about like greyhounds. They should be fed so as to look healthy and bright, but still not so as to be round and fat to the extent of concealing their ribs. I know no food which keeps hounds so bright and healthy as the butcher's paunches; and they may be obtained at a very low rate in the neighbourhood of a town of any size. The half-digested grass is a capital alterative, and there is also considerable nourishment in it. Hounds are very fond of it, and prefer it to any food you can give them; and nature seems to point it out to them in the summer, for they are then always looking out for grass and garbage.

Very little physic is required, as a rule, but a dose of Epsom salts or castor-oil now and then does no harm. If worms are present, or other disease, treat according to directions given in the chapter on the Diseases of Dogs.

CHAPTER II.

STAG-HUNTING.

Sect. 1.—Hunting the Carted Deer.

Stag-hunting may be divided into two grand sections—1st, hunting the carted deer; and 2nd, hunting the deer in its wild state. The former is confined to the red deer and the fallow deer; the latter to the red deer and roebuck. In describing stag-hunting, I shall assume that the pack is a perfect

one, because there are no rules for making it so, and I have no personal knowledge on the subject; besides, it is so rare a sport, that few of my readers are likely to want this knowledge.

In Hunting the Carted Deer, besides the pack of staghounds, already sufficiently described, and usually consisting of from 18 to 20 couples, and besides the master, huntsman, and whips, there is also employed a cart or small caravan, to convey the deer to the meet. This is drawn by one or two horses, and it is accompanied by two or three yeomen-prickers, or, as they are called in some hunts, "verderers." One of these drives the cart, and the others release the deer and prick him on, and when taken, hobble him and replace him in the cart. It often happens that the same deer is hunted from twelve to twenty times in the season, and at last becomes so used to the gallop as to show little fear of the hounds. One peculiarity of the staghound is his great tractability, in which he far excels the foxhound and bloodhound; and, in fact, he is selected, in great measure, for this virtue; for if the whips are unable to stop the hounds when the deer is at bay, the animal's life is sacrificed, and much future sport (if sport it can be called) is put an end to. All these officials, with the deer, being assembled at the spot appointed for the meet (which is if possible a common, in order to allow the deer to get well on his feet before he arrives at the inclosed country), the deer is uncarted, and, with a great parade of whip-smacking and horn-blowing, is turned off into the open country.

The Deer, which ought to be, and usually is, the red deer, male or female, has been some time before deprived of his horns, if a male, and also trained by compelling him to gallop round his inclosure for a considerable time each day. In most hunts three or four, or sometimes five or six, brace of this deer are turned into a large paddock, surrounded by a high fence, and they are daily driven round and round at a moderate pace by men on horseback, or muzzled hounds, or sometimes by hounds trained like sheep-collies, to bark without biting. Without this training they would be wholly unable to stand ten minutes before the hounds, but would be blown at once, because they are highly fed in order to get them into good condition, and would become internally fat, if this food were allowed to be converted into that material so unsuited to produce good wind. Any hounds will hunt deer naturally, and are peculiarly fond of the scent; and therefore it is only when carted deer are to be turned out and preserved from the fangs of their assailants that the highly-broken staghound is so necessary. Sometimes the hind is used, and many of this sex have afforded as good sport as their lords and masters. In this case there are no horns to be removed; but in the latter part of the season they are so much disposed to lay on fat, that they require a great deal of work to keep them in good training. The cart accompanies the progress of the hunt as nearly as may be, and the yeomen-prickers ought to be in attendance at the place where the deer is at bay, to hobble him or her. The hobbles are leather straps, which are buckled round the hind fetlocks, and are then drawn up on each side of his shoulders to a loop of rope thrown over the neck, and so secured. When the fallow deer is used as a substitute for the red deer, his horns also are removed, and he is trained in the same way; but this species has neither the boldness nor the speed of the red deer, and does not consequently afford anything like the same amount of sport. Formerly, hounds were kept to hunt the fallow deer, called buckhounds—a smaller kind of staghound—but they are now wholly out of fashion, and I am not aware that any such pack is maintained in the United Kingdom at this present time.

After the Enlargement of the Deer, from Five to Ten Minutes' Law is usually allowed before the hounds are laid on; during this time the deer has been driven away, selecting, as far as possible, the desired direction, and arousing his fears by whip-smacking, hallooing, and horn-blowing. Sometimes great difficulty is experienced in getting the deer to go straight away, and he runs the roads, instead of taking to the open country. It is always the best plan to send one or two mounted men to start him off, and these, in the Royal Hunt, are termed yeomen-prickers. Occasionally, however, a good and bold deer takes a line and goes straight away without dwell

ing a moment; and such deer have even escaped into the forest, and been lost for some time. Often they will stand before the staghounds, fast as they are, for two hours, or even two hours and a half; and instances have been known of runs lasting three hours without a check. This long period of time would require at least thirty or forty miles to be traversed, and such a distance has really been accomplished on some memorable occasions; one of which is recorded by Johnson, in his "Sportsman's Dictionary," as having taken place in 1796. The stratagems of the stag are sometimes very curious; he has been known to enter the bed of a rivulet, and run for some considerable distance *up the stream;* then, leaving its banks, he has again pursued his way, and as the scent has been carried by the water many yards below the point where he left the banks, it does not correspond with the actual line of the stag. This is a very puzzling affair, as a cast is necessitated, and nothing but great experience in the ways of deer will enable the huntsman to make it in the right direction. When hounds, therefore, suddenly throw up at a brook, and cannot carry the scent beyond it, the huntsman at once guesses, either that the deer has "taken soil," or that the above manœuvre has been practised. If, however, the former is not found to be the case (which the eye soon detects by examining the brook), he has only to cast widely enough forwards, remembering that the deer is almost certain to take up stream, and he most probably hits off the scent. Deer are also very fond of running through sheep, and nothing foils the hounds so much as a flock of these animals. Here again a cast is required, and the huntsman's experienced eye must enable him, if possible, to guess in which direction to make it; but as the deer has been reared in a park, and has no knowledge of the country he is traversing, this is often a matter of pure speculation.

Casts are effected as follows:—When the huntsman perceives that the hounds are at fault, and have thrown up their heads, being unable to hit off the scent, he gives a note or two on his horn, by which the hounds are gathered at his heels, and "lifts them" clear of the sheep, brook, or small covert or whatever else may be the cause of "the check." Then, making up his mind what is the most likely direction for the hunted deer to have taken, he trots off with his hounds so as to cross that line at some hundred yards off from the original scene of the check. Here, if his surmise is correct, the hounds at once hit off the scent; and if they fail to do so, he proceeds to cast his hounds in another direction, only giving up all hope when he has tried every possible plan of proceeding, and has failed in all.

The Take of the Stag is the wind-up of the royal sport, and is effected wherever the animal is standing at bay before the hounds. He usually "takes soil," that is, enters a pond or river, and there, with his back against a high bank or some similar defensive position, he awaits his assailants. It is always necessary in stag-hunting that the huntsman or whipper-in should be with the hounds, because, though from long custom they are so polite as to waive their title to a slice of the haunch, yet nature will sometimes prevail over education, and the deer, unprotected as he is by the defensive armour which his horns would be to him if not removed, must not be left undefended also by his former assailants—but now guardians—the huntsman and whips. These officials immediately whip off the hounds, and await the arrival of the verderers or yeomen-prickers, whose task it is to hobble the deer. The hounds are thus never blooded, which may account for their tractability, and their refraining from fastening upon the stag when first running into him at bay.

The chief packs at this time (1875) are—Her Majesty's, Baron Rothschild's, the Surrey, the Hon. H. Petre's, Mr. Angerstein's, the Waveney, Lord Wolverton's, and Mr. Nevill's, in England; and the Ward Union in Ireland.

The Expenses of a Pack of Staghounds vary immensely, from the enormous outlay on the Queen's Hounds to the comparatively small sum spent on some private packs. Few staghounds meet more than twice a week, and consequently one pack and a double set of horses are all that are required. Setting aside, therefore, the master's personal expenses in horses, &c., the necessary outlay will be as follows, calculated on the most economical scale:—

EXPENSES OF STAGHOUNDS, PER ANNUM.

	£	s.	£	s.
Huntsman and clothes	100	0		
First whip, ditto	70	0		
Second ditto, ditto	55	0		
Feeder and Verderer in one	30	0		
Taxes on servants	3	0		
			258	0
Feeding 25 couples of hounds, at 1*s.* 6*d.* a week each	195	0		
Tax on ditto	12	10		
Medicines, dressings, &c.	5	0		
			212	10
Six horses, for six months, at 15*s.* per week	117	0		
Ditto ditto summering, at 7*s.*	54	12		
Shoeing	16	0		
Veterinary surgeon	6	0		
Saddler	15	0		
Helper in stable, at 12*s.* per week, for six months	15	12		
			224	4
Allowance for keep of deer; accidents, &c.			105	6
Total			£800	0

SECT. 2.—HUNTING THE WILD RED DEER AND ROEBUCK.

This is a very different affair from the pursuit of the carted stag, but it is now almost unknown as a regular sport. The Devon and Somerset Staghounds have usually some good days on the Quantock Hills in Somersetshire, and on the Forest of Exmoor; but other packs are almost invariably confined to the hunting of the carted deer. It is useless to describe the hunting of the roebuck, because, as far as I know, no established pack is used for the pursuit of this wild and beautiful little species of deer. Whenever it is now hunted it is when it has been seen or heard of in the neighbourhood of any of the Scotch packs of harriers, and then it affords often a very good day's sport. No particular laws or rules can be laid down, as its being hunted is only an exceptional case.

THE FINDING THE WILD DEER is the point of difference between the two modes of stag-hunting; for here the animal is "harboured" in some secure retreat, instead of standing in his cart. Certain men, called "harbourers," with hounds trained for the purpose, called "tufters," undertake the task, and proceed into the forest for the purpose, the regular pack being held at hand by the huntsman and whips, ready to be laid on when the stag or hind is "unharboured." The harbourers being always in the forest know the haunts of the deer, and can generally tell pretty nearly where to find them. By walking round any coppice supposed to harbour a hart or hind, they ascertain by the "slot," or tread, and by the "fewment," or dung, whether the animal is in season and of a proper age for hunting; that is to say, whether his age is such as to make him "warrantable,"—a term already explained as meaning a stag that is six years old. The hounds also by their tongues indicate the sex, and the presence, if any, of a calf with the hind; and if so, they refuse to hunt, knowing, by previous experience, that these are unsuited to their master's purpose.

CERTAIN PERIODS WERE FORMERLY FIXED for hunting wild red deer, being, for the warrantable stag, from the 20th of August to the 30th of September, after which the hind was hunted for a short season; and in the spring again, from the 10th of April to the 20th of May, old barren hinds afforded sport. Thus, wild deer hunting had a very short season —three months out of the twelve at the utmost. Nowadays the Devon and Somerset hunt stags twice a week from about Aug. 10 to the middle of October, and then hinds until the middle of January.

THESE WILD DEER ARE HUNTED exactly in the same way as the carted deer, but the hounds, getting blood, run much more fiercely, and with more semblance to the dash of foxhounds. The huntsman must still keep well with his hounds; not as before, to save the deer, but rather to assist the hounds when the deer is at bay, and to save them from his horns, which are dangerous weapons of defence. Sometimes, however, a deer is saved from the hounds, because of their scarcity; but the rule is for the huntsman to go in as soon as he can, or dare, and cut the deer's throat with his knife while he is engaged with the baying of the hounds; the latter are allowed to lap his blood, which they do eagerly, and then he is "gralloched," and his entrails are distributed to them. After this the carcase becomes venison, and it is carried home on the harbourer's pony to be treasured as a special dainty.

The Expenses of this kind of Sport do not much vary from those given at page 155, as applying to the carted deer; the varying margin being that devoted to fees to harbourers, &c., &c., which cannot be estimated. I have, however, heard that the Devon and Somerset hounds are kept, all expenses included, for about 1000*l.* a year, and they have had such good sport, that, large as that sum is in proportion to the season, it may be considered well laid out

CHAPTER III.

FOX-HUNTING.

Sect. 1.—General Remarks.

The Noble Science, as fox-hunting is called by its votaries, is, by common consent, allowed to be the perfection of hunting. The animal hunted is just fast enough for the purpose, and is also full of all kinds of devices for misleading his pursuers. He leaves a good scent, is very stout, and is found in sufficient abundance to afford a reasonable chance of sport. It would therefore be consistent with the importance and dignity of fox-hunting to have placed it above stag-hunting, in the consideration of the varieties of hunting; but in order to avoid disconnecting stag-hunting from deer-stalking, the former has been placed in a more prominent position than it deserves, unless the size of the animal hunted is to be taken as a guide to the value and importance of the hunt. In this point of view it would certainly rank much higher than fox-hunting; but in every other it sinks immeasurably lower. Still there are certain advantages attendant upon the one which the other does not enjoy; for example, the followers of the stag may allege that they can always be sure of a gallop within certain hours, and can therefore calculate on being in their places, either of business or pleasure, by a certain time. Thus, members of either the House of Lords or Commons may hunt with her Majesty's Staghounds, and yet be in town in time for their duties at the Palace of Westminster. These considerations, and these alone, appear to keep up the expensive establishment at Ascot Heath.

Sect. 2.—Laws of Fox-Hunting.

These laws are very difficult to get at, because they are not recorded in any written code of rules, but are retained in the traditional records belonging to the families of the various masters of foxhounds. Certain countries have long been held by certain families, from father to son, and any attempt to encroach upon them would be resisted by all parties concerned with as much force as if the title-deeds to their estates were themselves endangered. Long disputes and violent controversies have at times estranged the masters of neighbouring packs from each other; but, nevertheless, no step has been taken to avoid a recurrence of these unpleasant fracas by the framing of written rules, to which an appeal could be made. A committee of "masters" has no doubt been established, but they do not meet at any stated times, and in practice are more inclined to social meetings than to those resulting in the manufacture of laws. Objections doubtless are easily produced at the onset to any such course; for it would be rather a dangerous proceeding, perhaps, to admit *on paper* that A has a right to draw B's covert whenever it suits him. It may be all very well to *suffer* it as a habit or custom between gentlemen; but to admit it as the preliminary section of an established law would do away with the liberty of the subject. At present A has the right (recognized among gentlemen) of drawing B's coverts during the time not objected to by him; but more than that would be conceded if B admitted the force of a law by which he would allow to A the right of entering for the purpose of drawing any of his coverts. If A conducted himself ever so obnoxiously towards B or others, there would be no means of getting rid of his presence, and he would really be more the master of the property, for sporting

purposes, than B himself. B therefore virtually says—"As long as you continue to hunt this country to the satisfaction of the hunt, including myself, you may draw my coverts; at all events, until I give you notice to the contrary." And such is really the understanding everywhere, though much more strong in self-supporting hunts than in subscription ones. The law of the land says, that before an action will lie for a trespass with hounds, due notice must be given of the action which will in that case be brought; and this notice can at any time be served upon the master of hounds who is obnoxious to any owner of a covert. But if a law relative to drawing had been signed by this landowner, the power of giving notice would have been suffered to lapse, and the master would be entitled to enter and draw in spite of the real owner. This would no doubt be an evil, and is, I think, a sufficient reason for leaving fox-hunting laws as they now exist—only in the breasts of gentlemen; for while all conduct themselves as such there is not likely to be a dispute, and the presumption is that if such a dispute has arisen, some one has outraged those other laws which gentlemen hold sacred among themselves, and which are independent of the code peculiar to fox-hunters.

All landowners, therefore, individually can spoil sport; and many cases of such selfish proceedings do occur, but not so often as might be expected from the feeling which game-preservers have that fox-hunting is injurious to their interests. In spite of this feeling, such is the general impression in favour of fox-hunting, that, until very lately, even the coverts most strictly preserved for the purpose of the *battue* have been open to the foxhounds whenever the master pleased. During the last few years, however, *battue* shooting has reached such a pitch, that a good many game preservers, even in "the Shires," have taken a different course, and will not allow hounds to draw their coverts at all, at the same time ordering the foxes in them to be destroyed. No one can dispute that the disturbance of the game by hounds is very great, and that many pheasants are driven by the noise, &c., out of bounds and lost for ever to the owner of that preserve; but nevertheless the rule is that the interests of the select few are made to bow to those of the many who compose the hunt. A more unselfish and praiseworthy act can scarcely be quoted, than that of the pheasant-shooter giving up his most cherished preserve to the use of a sport in which neither he nor any of his perhaps takes part. Fox-hunters are certainly rather *exigéant* in their demands when they require the concession as a public right; but custom has sanctioned it, and the refusal is now considered the act of a churl. Although, however, this permission is a great boon, a greater one still is generally practised by the very same individuals—namely, the actual preservation, or rather the breeding and rearing, of foxes for the express purpose of affording sport to others, but annoyance to themselves; and this also fox-hunters seem to claim as a right. They complain if it is not fully acted up to; but if the reverse is the case—if not only is there no permission to hunt, and no preservation of foxes, but, in addition, if a stray fox is trapped—then maledictions are heaped upon the head of the offender in language more forcible than elegant, and no punishment which could be devised would be thought too strong. But is this in conformity with the fair spirit of gentlemanly feeling which ought to exist? I can hardly think so. I honour most highly the fox-preserving pheasant-shooter, but I confess that I absolve from actual blame him who *openly* professes to forbid the presence of foxhounds on his property. The men of all others, however, who are to be despised and discountenanced are those—too common, to my knowledge—who profess to preserve, and are always ready and pressing with invitations to the master, and yet only disappoint him with a tame fox or a bagman; the former being fed up to his throat with rabbits, and the latter just shaken out before the hounds.

Covert-owners, therefore, must be allowed to have the power of doing what they like with their own, by the law of the land as well as the law of fox-hunting; but by the universal consent of gentlemen, it is settled that while they have this *negative* right of withholding their coverts from the master of the hunt in which their property is situated, they have no

positive power of inviting a strange master to enter and draw. This is a very wholesome rule, because it prevents one gentleman from annoying his neighbours by bringing an extra pack of hounds into the district, and thus being an extra source of damage as well as of rival claims. This rule, however, is only in operation as to coverts which have been habitually drawn, and are included within the limits of hunting countries actually in existence ; and it is admitted, that if a covert is not drawn by a pack of hounds for a certain number of years (which is variously stated to be five and seven), the proprietor has a right to hand it over to another and adjacent hunt. If this be done, and no reclamation takes place immediately—supposing that no draw has been made during the last seven years—then the covert becomes definitely attached to the new hunt, and no law of fox-hunting allows its disseverance.

These are the only recognised laws among fox-hunters ; for all mutual agreements between neighbouring hunt-clubs or masters are not laws, but simply temporary agreements, revocable at will. I know of no law, which really can be considered as such, other than those I have already stated. The agreements are as to stopping each other's adjacent earths in case of drawing coverts on the borders of the respective countries ; and these being mutually beneficial are acted upon on all occasions ; because, otherwise, every border fox would escape by running to the nearest earths in the next country, and consequently all coverts but the central ones would be quite useless. No one disputes the rule, which is universally acted on, that a hunted fox may be followed into another hunt ; and it is better for the hounds to do so than to whip off while the scent is good and there is any probable chance of blood ; but if the scent is bad, no sportsman would think of risking unpleasant reflections by casting his hounds or otherwise assisting them. This would lead to an imputation of an attempt to find a fresh fox, and should be cautiously avoided.

Such are the laws and customs relating to this noble sport ; and nothing shows the general high estimation in which it is held more than the universal concession of private convenience to its purposes.

The following Important Decision was given in 1854, by two of our highest authorities on the laws of fox-hunting countries. It referred to a dispute which had existed for a long time between the Essex and Herts Hunts, with respect to the right to draw a particular covert, viz., Takeley Forest. A committee was formed to collect evidence and conduct the case before the arbitrators, Lords Yarborough and Redesdale, who gave the following award, which is a lucid and searching exposition of the merits of the respective claims, and deserves to be placed amongst the archives of fox-hunting law, as establishing clear and fundamental principles with regard to the difficult subject of neutral coverts :—

"1. Immemorial usage is the common title to a fox-hunting country. When the date of the commencement of such usage is known, the right to it will depend on the manner in which it commenced. 2. In the case referred to us, satisfactory proof is given that the forest has been drawn by both hunts as long as any living man can remember. The evidence of the Calvert family, as to its belonging exclusively to the Herts Hunt, can only be received as a record of their opinion. At the time when the statement was made the Essex were drawing it, as well as before and since ; and in making the statement, Mr. Calvert does not say that they did so by permission asked and granted, nor give the date and particulars of any agreement on the subject. 3. There is a wide difference between permission and sufferance, as regards a title to a fox-hunting country. No term of years will bar an original right to the liberty to draw, commenced on permission granted conditionally, with a power to resume. An encroachment may be neglected for a time, and, nevertheless, afterwards properly and successfully resisted if satisfactory proof can be given that it was an encroachment and an innovation on former practice between the hunts. But a practice claimed as right by one hunt, and suffered to be exercised by the other for a period of sixty years and more, when all evidence as to the time and manner in which it originally commenced is lost, must be held to establish that right, or a door would be

opened for endless disputes as to boundaries. 4. The fact of the forest having been drawn by the Essex is admitted, and a reason assigned for its never having been formally objected to —viz., that it was a great nursery and preserve of foxes, and then so strong and impracticable a woodland, that there was no getting a fox away, and no chance of a run from it; and that, as it was necessary for the sport of both countries that it should be routed as much as possible, 'the Herts were glad to see the Essex go there, and do the disagreeable work, and therefore no objection was taken to their doing so.' This is a very important admission. It is seldom that so clear a reason can be assigned in the origin of a neutral draw, as the case of a woodland to which no one was very anxious to go, but which it was the interest of both hunts to have regularly disturbed. 5. The neutral districts so established between the hunts extended beyond the forest, and disputes arose. In 1812 an arrangement was come to between the masters of the hunts, which the Herts rely on as establishing their exclusive right to the forest, because it is not mentioned among the neutral coverts. The answer of the Essex is that it is not mentioned, because there never was a doubt as to its neutrality, and that the dispute was only as to certain woods outside. In support of this they prove that the forest was regularly drawn by them afterwards. The Herts reply that this was done because Mr. Houblon, the chief proprietor there, became joint-master of the Essex, and asked permission to draw it from Mr. Hanbury, the master of the Herts; and a copy of a letter from Mr. Hanbury to Mr. Houblon is produced, in which he says that he understands that the latter wishes to draw 'some more coverts' as neutral, and that though he was not himself an advocate for a neutral country, he and Mr. Calvert had every wish, on Mr. Houblon's account, to accommodate him, and would meet him and ascertain his wishes. What these were is not known—the words 'some more coverts' could hardly apply to the forest, nor is there any proof given that they did so apply, or that any extension of the neutral country then took place. On the contrary, from the care Mr. Hanbury and Mr. Calvert bestowed on these matters, it is hardly possible that, if anything was done, no written memorandum should have been kept; and the probability is that on discussing the matter, the objections of Mr. Hanbury to extend the neutral country were found insurmountable, notwithstanding his desire to accommodate Mr. Houblon. 6. The forest continued to be drawn by the Essex till 1832, when Lord Petre took the Herts hounds, and 'claimed an exclusive right to the forest and the other coverts, and asked for a reference.' A meeting took place, and the result was that there was no reference, and that Mr. Conyers was not dispossessed. Again, in 1838, Mr. Houblon, the owner of the forest, became master of the same hounds, and desired 'to have the forest drawn on certain defined conditions, or a reference;' but Mr. Conyers still kept his old ground. It is clear that if Mr. Houblon's father had only got leave to draw the forest conditionally from Mr. Hanbury in 1812, there must have been positive evidence of that fact in 1832, as it must have been known to many. It is asserted, that in 1832 the claim was only waived during Mr. Conyers' life, but, as in 1833 the owner of the forest, then master of the Herts hounds, asked to have the arrangements respecting that draw 'denied, or a reference,' it is clear that no abandonment of the Essex claim of right took place in 1832; while Mr. Houblon's demand negatives the idea of any agreement having been then entered into by the Herts to abstain from making a claim only during Mr. Conyers' life. 7. The reference asked for on these two occasions has now been brought before us, and, after having given our best consideration to the subject, we are of opinion that, according to fox-hunting laws, the forest does not belong exclusively to either hunt, but must be considered neutral, for the reason assigned in the third and fourth paragraphs.—YARBOROUGH, REDESDALE.—*Nov.* 19, 1854."

Since that time the chief dispute between foxhound committees has been that between the Cotswold and Broadway countries, which, however, involved no new principle, and chiefly depended upon the evidence as to the custom existing many years before. It is therefore needless to describe the

correspondence which appeared in the papers of the day at great length.

Sect. 3.—Fox-hunting Countries.

The different fox-hunting countries are classed under two heads—crack countries and provincials. This is a curious line to draw, as if either were a metropolis, as opposed to a province. It is true that the grass-countries of Leicestershire, with adjacent parts of the surrounding shires, are, as it were, one centre of hunting, and even, geographically speaking, of England; but, nevertheless, for one province to call others provincial, is like the Chinese calling all other nations barbarians. One thing is clear, that the grass-countries have a great advantage over all others in holding a scent, and enabling hounds to go their best pace with a middling one, as they often do. Any hounds can race with a blazing scent in any country, but for one good scenting run in an arable country there are six over grass. Horses also can live through a much longer and faster burst on sound turf than on arable land, however well drained; and the ridges and furrows alone, without the extra depth and stickiness of soil, will make all the difference in pace. Many horses which can carry weight above ground would die away at once in dirt; and consequently it is as easy to be carried up to fast hounds in Leicestershire as up to slow ones in deep arable countries. Good fences are required in grass-countries, because the grazing of cattle always necessitates a strong fence; and that which will keep an ox in his pasture requires a good made hunter to get over it; but as the taking off is sound and springy, the horse has a better chance of doing his jump well, and clearing the fence without touching it; and this is a very important feature in grass-countries. Again, as the land in these districts is very valuable, it is seldom planted to any greater extent than for game-preserving purposes; and the only coverts where foxes can hang are those narrow belts which are formed for the *battue*, or the spinnies and gorse-coverts expressly made for lodging "the animal." Hence the obstructions which large woodlands present are not offered in the crack countries, at least not in the crack portions of them, and hounds can have fair scope for their powers. Leicestershire, for instance, has its "forest," but when hounds meet there they are comparatively deserted in favour of some neighbouring pack. No wonder, therefore, that in the Shires they often burst a fox in twenty or thirty minutes; and that a run lasting more than an hour gets the reputation either of being after a wonderful fox, or of being wonderfully slow in itself.

The excitement which is produced by these "bursts" is very extraordinary. Men are as jealous of success in getting forward here as in the army, the forum, or the bar; and perhaps, as the blood of its votaries is generally younger, the contest is to the same extent hotter and more ungovernable. Neither accident nor illness will cause a man to remain with his friend, and "*sauve qui peut*" is the order of the day. It is truly a glorious sight to see two or three hundred of England's best men mounted on her still unrivalled horses, and racing for the lead. Glorious is the view of this the most beautiful cavalry in the world, while waiting at the covert-side; but far from glorious is the first swoop made in charging the fence which presents itself after hounds are gone away. Crash goes everything if not easily cleared, and horses and men make light of ox-fences, brooks, or gates in the first frenzy of their charge.

On the other hand, in arable countries the scent in the first place is comparatively bad, from the nature of the soil, varying much according to its precise kind, and the mode of its cultivation; next, the depth of the soil is too great for horses, and to a certain extent interferes with hounds; and lastly, there are almost aways large woodland tracts which come even into the heart of the country, and cause checks at every few miles. Besides these obstacles, every plough at work affects more or less the line of the fox, and therefore straight runs are the exceptions; while the short, sharp, and decisive bursts of twenty or thirty minutes' duration are almost unknown. Much lifting and quick casting are here constantly required, if the fox is to be killed in the modern and fashionable style; and if a hound has nose enough to work out a scent through all the intricacies of small and large coverts, constantly-repeated small flecks of

sheep, chasing of sheep-dogs, &c., he will be so slow as to be ridden over by the field in their impatience. Either, therefore, the modern system requires, and must receive, attention, or the arable (provincial) countries must be gradually extinguished. From this there is no appeal, and one horn or other of the dilemma must be encountered.

It is no wonder, therefore, that the crack grass-countries look down with contempt upon the worst arable ones; but there are some parts, not included in the grazing countries, which afford as good runs as can be met with anywhere. Such are some portions of the Beaufort Hunt; great part of the Oxfordshire country, some part of which is grazing land, it is true; the Heythrop, including the beautiful slopes of the Cotswold Hills; the Cattistock in Dorsetshire; the York and Ainsty and the Holderness in Yorkshire; and parts of the Vale of White Horse. Still, if a good sportsman *had his choice*, he would settle himself in one of the crack countries; and, as he would then be able to command several packs, he might enjoy hunting in all its glory. This, however, requires a good stable of horses, because to be badly mounted there argues and necessitates the loss of a good place in the field. If all are equally badly off, good horsemanship may shove a bad horse into a good place; but when in a large field every position is filled by a good man on a good horse, it is idle for even a good workman to appear on a sorry and inferior hunter; he had far better be contented with a slower country, and settle himself where an occasional check will give him the chance of seeing the hounds between the find and the worry. Less than this is not *hunting;* for mere riding to hounds I hold to be anything but that amusement. If the working of hounds is not seen and watched, and admired when good, or blamed and criticised when defective, no one can really be said to participate in the sport of hunting the fox. He may ride as well as a rough-rider, and as boldly as the Light Brigade at Balaklava, but he knows nothing of hunting as a science, and should not flatter himself that he is anything more than a good horseman, with perhaps a good eye for country.

Sect. 4.—The Preservation of Foxes.

This being the primary and most essential part of fox-hunting, is necessarily the first thing for a master to attend to. Hounds may be bought even at a month's notice; horses may soon be got together if only a cheque is written for their value (real or supposed); but foxes *must* be bred, if sport is to be shown. Any number may be turned down in the autumn, but they will soon be shot or trapped if the keepers are not otherwise ordered; or, if allowed by them to escape, and to live till they are found by the hounds, being strange to the district, they will run in circles like hares instead of making good their point.

The general and, if possible, the ready consent of the owners of coverts being obtained, they should all be requested to see that their keepers do their duty; but the keepers should also be engaged in the cause by certain promises of reward for every *good* find. They should specially be informed that wild foxes will only be paid for, and that if the evidence is strong of the fox found being a bagman, they will be mulcted of their *honorarium*. An additional present for a good run will never be thrown away, as these gentlemen have more in their power than is generally known. These arrangements in subscription packs are usually left to the committee, and perhaps properly so, because the disputes with keepers are better kept out of the master's hands.

Whenever the foxes are short in numbers, cubs must be obtained in the summer, or vixens turned down in the spring. There are in a great many hunts certain localities unfitted for this sport, and yet in which foxes are very apt to breed. Here the cubs may with propriety be dug out and turned down in some more favoured spot, as, for instance, in a gorse covert in the middle of a good open country. Great numbers of French foxes and cubs are introduced every year into this country, but they are unfitted for hunting, and the best by far are the Scotch foxes from non-hunting districts, if these can with certainty be obtained. Of course every fox-dealer will account for the possession of his cubs, if requested to do so; but too often no questions are asked or answers given,

and the fox or cubs are thankfully paid for from whatever quarter they have been obtained. Bad as this system is, it is so general that one act neutralizes another, and the fox-stealer only takes the trouble off the hands of the whips or earth-stoppers, who would have to look out for woodland cubs, if they were not taken possession of for the purpose of sale in another and perhaps adjacent country. The cubs, when turned down, require careful feeding for some time, and seldom can take care of themselves until the end of September or the beginning of October. No master can calculate upon more than one half of his cubs turning up at the beginning of the season, the others not escaping the chances of death and imprisonment which the fox-stealer, the small farmer, and the badly-instructed keeper are constantly endeavouring to compass.

Sect. 5.—The Number of Packs Kept.

At this time about 120 packs of foxhounds are kept in England and Wales, exclusive of a considerable number in Scotland and Ireland. Each of these packs costs, on an average, about 1500*l.* a year, some being three times as costly, and others again not costing half that sum. In England, therefore, a yearly expenditure of at least 180,000*l.* may be calculated on as the cost of the establishments alone, while, if to this is added the additional cost of hunters to mount "the field" attending each hunt, the whole outlay cannot be less than six or seven hundred thousand pounds. From a national point of view, therefore, as supporting the breed of horses calculated for war purposes, this sport should be encouraged; and not only as keeping up a good supply of these useful animals, but also as keeping up a high standard of health, the courage or pluck, and bodily constitutions, of the men who ride them. Many obstacles are now interfering with these establishments—low rents of landlords, the great increase of game preserving, the introduction of wire fences, the extension of railways, and the yearly progress of the plough—all combine against fox-hunting, which is becoming in some districts less popular than hare-hunting. How much of this is due to its own change of management may be, perhaps, hereafter explained; but that it is so, the lists of the two kinds of hounds sufficiently show. For my own part I care not, as far as the country is concerned, which sport is triumphant; but one or the other certainly ought to be encouraged, for the sake of that country's welfare. Some districts are totally unfitted for fox-hunting, and are yet pretty well adapted for the pursuit of the hare, which takes a smaller range, and can often be well hunted on a few hundred acres. Let these, then, be reserved for her pursuit; but let the establishment be of such a character as to reflect credit upon its subscribers. Expense is not the criterion I mean; but let the hounds only be well hunted and well fed—which last is not a very expensive proceeding—and I am quite sure the number and quality of the horses kept for the purpose of following them will be quite equal to those which would be used with an inferior pack of foxhounds hunting a country unfitted for the display of their peculiar powers.

Sect. 6.—Expenses of Fox-Hunting.

Nothing varies more than the bills of various packs of foxhounds. I have seen a pack, costing little more than 700*l.* a year, show more sport in the same country than another subsequently established, and costing 1400*l.* per annum. The following may be considered as the cost of two packs—one for five days a fortnight, the other for five days a week:—

Estimate for a Pack of Foxhounds Hunting Five Days a Fortnight.

	£	s.	£	s.
Huntsman	100	0		
First whip	70	0		
Second whip	55	0		
Feeder	30	0		
Earth-stopper or fees to keepers	25	0		
Taxes on servants . .	3	0		
			283	0
Feeding 30 couples of hounds at 1*s.* 6*d.* per week each	234	0		
Taxes on ditto . . .	15	0		
Medicines, dressings, &c.	6	0		
Expenses of walk, for 20 couples of young hounds	65	0		
			320	0
Carried forward .			603	0

	£	*s.*	£	*s.*
Brought forward . .			603	0
Six horses, for six months, at 15*s.* per week each	117	0		
Ditto ditto, summering, at 7*s.*	54	12		
Shoeing	16	0		
Veterinary surgeon .	10	10		
Saddler	15	0		
Helper in stable, at 12*s.* per week, for six months, with tax . .	16	7		
			229	9
Total . .			£832	9

ESTIMATE FOR A PACK OF FOXHOUNDS HUNTING FIVE OR SIX DAYS A WEEK.

	£	*s.*	£	*s.*
Men as before, with the addition of second horseman for huntsman, at 30*l.* per annum, and extra tax on ditto			313	15
Feeding 55 couples of hounds at the same rate	429	0		
Taxes on ditto . . .	23	2		
Medicines, dressings, &c.	10	0		
Expenses of walk for 30 couples of young hounds	100	0		
			562	2
18 horses, for six months, at 15*s.* per week each	351	0		
Ditto ditto, summering, 12 at 7*s.* a week (6 sold)	109	4		
Shoeing	40	0		
Veterinary surgeon .	18	0		
Saddler	30	0		
Three helpers in stable, one at 15*s.* and two at 12*s.* a week, with tax	103	13		
			651	17
Total . .			£1,527	14

These estimates are both exclusive of all fees to keepers and rents of coverts, &c., which vary in different countries so much as to make it impossible to form any correct idea as to their amount.

SECT. 7.—DIFFERENT STYLES OF FOX-HUNTING.

Fox-hunting in the eighteenth and fox-hunting in the nineteenth centuries are somewhat different pursuits; the former was truly hunting, from the time when the drag was hit off up to the end of the run, which generally lasted more than two hours. Contrast this with the speedy burst in the neighbourhood of Melton Mowbray in the present day, and one would scarcely recognise the two as being included under the same head. In order that modern fox-hunters may be able to compare the old style with the modern, I will here quote Beckford's imaginary run, given in his celebrated letters; reminding my readers that this was written nearly a century ago, when already the old slow southern hound was being replaced by the cross with the northern hound and the greyhound. Beckford begins by recommending the *hour of sunrise* as that for the meet. How would this suit the men of the present day, I wonder?

BECKFORD'S DESCRIPTION OF A RUN.—"Now, let your huntsman throw in his hounds as quietly as he can, and let the two whippers-in keep wide of him on either hand, so that a single hound may not escape them; let them be attentive to his halloo, and be ready to encourage or rate as that directs. He will, of course, draw up-wind, for reasons which I shall give in another place. Now, if you can keep your brother sportsmen in order, and put any discretion into them, you are in luck; they more frequently do harm than good; and if it be possible, persuade those who wish to halloo the fox off, to stand quiet under the covert-side, and on no account to halloo him too soon, if they do, he most certainly will turn back again. Could you entice them all into the covert, your sport, in all probability, would not be the worse for it. How well the hounds spread the coverts! The huntsman is quite deserted; and his horse, who so lately had a crowd at his heels, has now not one attendant left. How steadily they draw; you hear not a single hound, yet none are idle. Is not this better than to be subject to continual disappointment, from the eternal babbling of unsteady hounds?

> "'See! how they range
> Dispersed: how busily this way and that
> They cross, examining with curious nose
> Each likely haunt. Hark! on the drag I hear
> Their doubtful notes preluding to a cry,
> More nobly full and swelled with every mouth.
> SOMERVILLE.

How musical their tongues! and as they

get nearer to him how the chorus fills! Hark! he is found! Now, where are all your sorrows and your cares, ye gloomy souls? or where your pains and aches, ye complaining ones? one halloo has dispelled them all! What a crash they make! and echo seemingly takes pleasure to repeat the sound. The astonished traveller forsakes the road, lured by its melody; the listening ploughman now stops his plough, and every distant shepherd neglects his flock, and runs to see him break. What joy, what eagerness in every face! Mark how he runs the covert's utmost limits, yet dares not venture forth—the hounds are still too near! That check is lucky. Now, if our friends head him not he will soon be off. Hark! they halloo; by G— he's gone! Now, huntsman, get on with the head hounds; the whipper-in will bring on the others after you; keep an attentive eye on the leading hounds, that, should the scent fail them, you may know at least how far they brought it. Mind Galloper, how he leads them! It is difficult to distinguish which is first, they run in such a style; yet he is the foremost hound; the goodness of his nose is not less excellent than his speed. How he carries the scent! and when he loses it, see how eagerly he flings to recover it again! There, now! he's at head again! See how they top the hedge! Now, how they mount the hill! Observe what a head they carry, and show me, if thou canst, one shuffler or skirter amongst them all. Are they not like a parcel of brave fellows, who, when they engage in an undertaking, determine to share its fatigues and its dangers equally among them? It was, then, the fox I saw as we came down the hill; those crows directed me which way to look, and the sheep ran from him as he passed along. The hounds are now on the very spot, yet the sheep stop them not, for they dash beyond them. Now, see with what eagerness they cross the plain! Galloper no longer keeps his place—Brusher takes it; see how he flings for the scent, and how impetuously he runs! How eagerly he took the lead, and how he strives to keep it! yet, Victor comes up apace; he reaches him! Observe what an excellent race it is between them; it is doubtful which will reach the covert first. How equally they run! how eagerly they strain! Now Victor! Victor! Ah, Brusher! thou art beaten, Victor first tops the hedge! See there, see how they all take it in their strokes! The hedge cracks with their weight, so many jump at once. Now hastes the whipper-in to the other side of the covert—he is right, unless he head the fox——Listen! the hounds have turned; they are now in two parts—the fox has been headed back, and we have changed. Now, my lad, mind the huntsman's halloo, and stop to those hounds which he encourages. He is right—that, doubtless, is the hunted fox! Now, they are off again. Ha! a check. Now, for a moment's patience. We press too close upon the hounds. Huntsman, stand still; as yet they want you not. How admirably they spread! How wide they cast! Is there a single hound that does not try? If there be, never shall he hunt again. There, Trueman is on the scent: he feathers, yet still is doubtful. 'Tis right; how readily they join him! See those wide-casting hounds, how they fly forward to recover the ground they have lost! Mind Lightning, how she dashes; and Mungo, how he works! Old Frantic, too, now pushes forward; she knows as well as we the fox is sinking. Huntsman! at fault at last? How far did you bring the scent? Have the hounds made their own cast? Now make yours. You see that sheep-dog has coursed the fox. Get forward with your hounds, and make a wide cast. Hark! that halloo is indeed a lucky one. If we can hold him on, we may yet recover him; for a fox so much distressed must stop at last. We shall now see if they will hunt as well as run; for there is but little scent, and the impending cloud still makes that little less. How they enjoy the scent! See how busy they all are, and how each in his turn prevails! Huntsman, be quiet! Whilst the scent was good you pressed on your hounds: it was well done; when they came to a check you stood still, and interrupted them not. They were afterwards at fault; you made your cast with judgment, and lost no time. You now must let them hunt. With such a cold scent as this you can do no good: they must do it all themselves. Lift them now, and not a hound will stoop again. Ha! a high-road at such a time as this, when the tenderest-nosed hound can hardly own

the scent! Another fault! That man at work, there, has headed-back the fox. Huntsman, cast not your hounds now! You see they have overrun the scent: have a little patience, and let them for once try back. We must now give them time. See where they bend towards yonder furze-brake. I wish he may have stopped there. Mind that old hound, how he dashed over the furze: I think he winds him! Now for a fresh *en tapis!* Hark! they halloo. Ay, there he goes! It is nearly over with him; had the hounds caught view he must have died. He will hardly reach the covert. See how they gain on him at every stroke. It is an admirable race; yet the covert saves him. Now be quiet, and he cannot escape us; we have the wind of the hounds, and cannot be better placed. How short he runs! He is now in the very strongest part of the covert. What a crash! Every hound is in, and every hound is running for him. That was a quick turn! Again another! He is put to his last shifts. Now Mischief is at his heels, and death is not far off. Ha! they all stop at once—all silent, and yet no earth is open. Listen! now they are at him again. Did you hear that hound catch view? They overran the scent, and the fox had lain down behind them. Now, Reynard, look to yourself. How quick they all give their tongues! Little Dreadnought, how he works him! The terriers, too, they now are squeaking at him. How close Vengeance pursues! how terribly she presses! It is just up with him! Gods! what a crash they make! The whole wood resounds! That turn was very short! There! now—ay, now they have him! Who-hoop!"

This glowing description, except in the time fixed for the meet, is a beautiful account of what a run should be in the present day; but there is one remarkable proof contained in it that the speed was in those days very different from what it is now. Suppose, for instance, a moderately-fast run in a grass country, and a terrier by chance started with the hounds, where would the little rascal be at the kill? Yet Beckford expressly mentions *the* terriers as squeaking at him before the kill, while the hounds are running in the last covert. Now, the terriers here alluded to can only be those belonging to the pack, which were formerly, indeed, part of the establishment, and which must have started with them when the fox was found. This speaks volumes as to comparative speed. I am quite sure that even in provincial countries a terrier cannot live with foxhounds of modern blood and speed; if he could, a pack of terriers would be better than foxhounds, for they can generally hunt lower than fast foxhounds. The remarkable patience and want of interference on the huntsman's part, in this account, would strike anyone who is now in the habit of seeing the hounds perpetually lifted and capped to halloos,—whips sent on to points to view the fox, and to halloo if they view him, and all those *human* artifices rather than *canine* by which time is saved and the fox so quickly killed. But all these artifices and pressing forward, it may be said, are now necessary, in order to get out of the way of the impatient field. Well, they may be so, and no doubt are; but then, why should the field be allowed to be so unruly? This is the fault of the master, though of fashion also; for if this latter all-powerful motive power were to say that order in the field must be kept, no doubt the master's voice would be scarcely needed. As it is, the horsemen are vying with each other for a good place, and are utterly regardless of the proceedings of the hounds, or of the necessity for giving them fair play.

The Disadvantages of the Modern School are, that from hounds being so constantly taken hold of, and lifted on every possible chance of doing so, they cease to persevere when in difficulties, and look to their huntsman for aid rather than to themselves and the delicacy of their noses. Hence, the evils react upon one another—first, the horsemen press upon the hounds, and, as a consequence, the hounds are obliged to be got forward out of their way; secondly, the hounds, in being thus constantly lifted for the above reason, are deprived of practice in using their noses, and cease to afford those beautiful specimens of the old-fashioned style of hunting which will induce men, if anything will, to watch their proceedings with interest and caution, lest they should be disturbed. Nothing affords so strong an argument in favour of the old style of hunting as this double reaction of the errors of

the present day; and the cautious riding of the "thistle-whippers," as they are deridingly called by the fox-hunter, is a clear proof that hunting, when carried to perfection, will always be watched with attention. Observe the same men with foxhounds and harriers: with the former they are all alive for galloping and getting a good place—jealousy of their friends is the predominant feeling, and the hunting of the hounds is not seen, or, if seen, is not regarded: but next day the same parties attend a "thistle-whipping" concern, and there they are all attention to the beautiful self-casts of the harriers or beagles, and admire as much as anybody the brilliant powers of the hounds.

Even now, in spite of fashion, I believe, if a master would but be firm, and, after breeding his foxhounds with a little more hunt in them, would rigidly abstain, through his huntsman, from assisting them except in extreme cases, that, in a very short time, the field would pay that attention to their efforts which they now bestow upon their horses and themselves. At all events, it is worth trying the experiment in inclosed and arable countries, where it is impossible to vie with the grass countries in *pace*, but where in hunting a cold scent the hounds may display such powers as to attract attention and command respect. But even here discouragement meets the provincial master, for with the most delicate-nosed hounds he can scarcely expect that a scent will be made as much of over his fallows as would be shown in Leicestershire by hounds not nearly such good natural hunters. None but a practical and experienced man can be a judge of these points, and such men are rare indeed in the hunting field. Nevertheless, I should much like to see the trial made, and in course of time, I cannot help fancying that the system, if well carried out, would induce many to admire the genuine hunting of the fox under difficulties, as much, or perhaps more, than the comparatively easy task of bursting one in the grass lands of the crack countries.

CHAPTER IV.

FOX-HUNTING (*Continued*).

SECT. 1.—PACK TO BE OBTAINED AT ONCE BY PURCHASE.

No one nowadays would dream of getting together a pack of foxhounds by breeding them himself from a bitch or two, without any considerable outlay. Such a plan is impracticable, because several important elements of success must co-operate at the same time, and will not wait for one another in idleness, as—first, the country cannot lie open and unused; secondly, the huntsman, whips, &c., would have nothing to do, and yet are required for a small pack as well as a large one; and thirdly, patience will seldom last long enough, even if the other elements were so accommodating as to allow of this mode of business. All these several items must, however, combine; and all *might* be kept dangling on but "the country," which will not wait, and which alone will put a stop to all dallying with such a fickle mistress. The moment, therefore, a master undertakes the important duty of "hunting a country," he must put his best leg foremost, and set about getting a pack of foxhounds in earnest. The country and the fox-preserving I have already dilated upon, and it now remains to consider how the procuring of the hounds is to be compassed in the quickest time, in the best manner, and at the most economical rate. These three items will form my guide in considering the subject in the following pages; being really those which ought to guide every prudent master throughout his career.

THE BEST MODE OF GETTING TOGETHER A PACK OF FOXHOUNDS is either to purchase a pack, or to get together a lot of draft-hounds from those kennels which your fancy leads you to select. In my own opinion there is little choice in this respect; all hounds are well enough bred, and you may always succeed in getting together a good pack in a few

years, from drafts obtained from any of our best kennels, if only you are careful in your subsequent breeding, kennel management, *and hunting*. I am quite satisfied that in hunting all depends upon the huntsman; and that a good man will always be able to make good tools, provided he is not stinted in horses, meal, and whips, and has a good country with plenty of foxes. With these advantages he will readily make a good pack, but not always a good-looking one. It sometimes happens that too much attention is paid to looks, and good hounds are drafted from having coarse heads or throats, necks, &c., while neat but useless animals are prized and carefully retained. Draft-hounds may always be bought at three to five guineas a couple; and one quarter or a third of them will generally be serviceable for one or two seasons. The remaining two-thirds, or three-quarters, will, on trial, be consigned to a speedy death; and the result will be, that for thirty couples of tolerably useful hounds, from 200 to 250 guineas must be paid; and if this result could only be calculated on with certainty, it would be a cheap way of getting such a pack of hounds together. Unfortunately, however, it will be found that this number will be more than the average, though, with luck, and some little judgment in going to work, the above has been accomplished on more than one occasion. Sometimes a good pack is to be sold; and if steady, well-bred, and well-hunted, it is cheaper to give 500*l.* for an entire pack of forty or fifty couples, young and old, than to buy drafts at three guineas a couple. One, two, and even three thousand guineas have been given for packs of foxhounds; but much more than five hundred is only a fancy price. At the sale of Mr. Osbaldeston's hounds in 1840 one lot of five couples was bought in at 1360 guineas; while in 1870, when Lord Poltimore disposed of his dog pack, the actual selling price of the whole of the entered hounds was 148 guineas a couple, on the average. But supposing a draft pack is determined on, and the country is a "three days a week" one, then you should purchase about from eighty to a hundred couples, according to your luck in the first drafts you buy; but, at all events, you must persevere in your purchases until you can reckon on fifty couples of *serviceable-looking* hounds—that is, hounds which have no apparent bodily defect, such as lameness, blindness, &c. For it must be remembered that in drafts there must be no picking and choosing, but the lots offered must be either taken entire or refused. Such is the custom; and as they are the huntsman's perquisite, there is great reason for this liberal mode of dealing. Well, then, having at length got together fifty couples of useful-looking hounds, they must be kept on till the month of August, when cub-hunting will soon show you which can be retained, and which must be discarded as useless, from their babbling, skirting, or slack-running propensities. The head and tail must also be drafted at this time—that is, the very fast and very slow hounds, because the beauty of a pack and their efficiency also are marred by one, two, or three leading away from all the rest, or by the same thing happening at the tail, but in an opposite direction.

Sect. 2.—Breeding.

This Pack thus got together, then, must be kept up by Breeding; and if some brood-bitches are procured in February or March, something may be done in this way during the first summer. The best months, however, for this purpose, are March or April, which would require the bitch to have been put to the dog nine weeks earlier. Of course at this time the young master of hounds must be dependent upon his longer-established fellows for the sires of his whelps; but he will seldom have much difficulty here, unless he is very particular, or has a very limited hunting acquaintance. In subsequent seasons he must breed from twenty to thirty couples of whelps, if he wishes to attain anything like excellence in his pack; for out of these he will not choose to send out to walk more than half the number; or if sent, he will speedily weed them down to about from twelve to fifteen couples, which should be the young entry every year. If the bitches whelp very early, they should be allowed to have a warm place, such as a loose box or stall in a stable which is warm enough to preserve the whelps from the effects of cold; and the young puppies should

not be sent out to walk before the end of April or the beginning of May, unless the person who is to rear them is one who will take care their growth is not checked by cold.

THE BEST BLOOD OF THE PRESENT DAY is to be found in the kennels of Lord Fitzwilliam, the Duke of Beaufort, Lord Fitzhardinge, and Lord Yarborough; however, these hounds are very much of the same blood, and have been bred one with the other to a great extent. No kennel could long be maintained in all its excellence without an occasional infusion of fresh blood; and though I believe in-and-in breeding may be practised to a certain extent with advantage, yet, if persisted in without occasional fresh infusions, it will ruin the constitution of either horse or dog.

THE WORKING EXCELLENCES of the foxhound, and for which he should be selected, are—first and foremost, the dash peculiar to his breed; secondly, a good nose; thirdly, a tendency to cast forwards, and never back like the harrier; fourthly, great power of endurance of fatigue, cold, and wet; fifthly, sufficient tractability, without having too much softness; and sixthly, perfection in drawing and hunting.

THE DEFECTS WHICH SHOULD ESPECIALLY BE AVOIDED are—first, the throwing the tongue too freely, commonly called "babbling;" secondly, mute running; thirdly, skirting, or a tendency to leave the rest of the pack, instead of "scoring to tongue" as the foxhound should do—this skirting is that excess of jealousy which should be avoided in the foxhound as much as it should be encouraged in the greyhound; fourthly, pottering and dwelling on the scent; fifthly, hanging in covert when hounds are gone away; sixthly, running riot—which means that the particular game which is being hunted should be adhered to, and all other considered as "riot"—thus, the fox and hare are "riot" to the staghound, while deer and hare are in the same category as regards the foxhound, and the deer and fox to the harrier. Some of these faults are easily broken, by means of the whip, if necessary, or a severe rate in milder cases; and the last three only require the aid of the whipper-in; but "babbling," "mute running," and "skirting," are dependent upon a defect in breeding, which nothing will eradicate, and they also generally increase with age, so that little hope of amendment is afforded, and the rope or river must be resorted to at once.

THE SELECTION OF THE INDIVIDUAL BITCH should be very carefully made. Her pedigree, above all, should be such as to lead you to expect good performances in the field. I should certainly never breed from a foxhound or harrier bitch, however well formed, which had not shown good hunting qualities during at least two seasons; but even this recommendation would not suffice without good blood, and in addition, shapes suited to her office. Exceptional cases of good hunting are common enough, even with mongrels; but, though good in themselves, such bitches will not throw good puppies. In crossing her, due care will be taken to select such a dog as shall improve her good qualities, and eradicate bad ones. Thus, if she is too small, she should be put to a dog of good size, or *vice versâ;* again, if light in the body, a dog of full proportions in that department must be given her; or, if she is thin and weak in the feet, her mate must be remarkable for good "understandings." On these principles the cross must be selected, and every pains must be taken to get what is the *desideratum* for her. After lining, the bitch may hunt for about three or four weeks; but from that time she must not be taken out for fear of injury to her burden, which then begins to show, so as to make her also unwieldy and short of wind. She should, however, be allowed her liberty, if possible, or should, if confined, be regularly exercised, since her health, and consequently the health of her litter, will suffer by entire want of this advantage. When near her whelping time, she should be allowed to choose her bed in some quiet corner of an out-house or loose box, or in that part of the kennel which ought to be especially set apart for breeding. She should not be allowed to get too fat, but still she should be maintained in good condition. The former is bad, as leading to difficulty in whelping, whilst the latter is necessary, because she will have to sustain great drains upon her constitution. When pupping, great quiet is desirable, as many bitches are so nervous as to destroy or devour their whelps if alarmed. The usual

attendant, whether feeder or kennel huntsman, should be the only person who should go near her; and he should always speak before opening her door. It is necessary, however, that he should occasionally visit her, because bitches are sometimes so long in labour as to demand assistance; and they also often require a little stimulating and supporting food, in the shape of broth, or even caudle. When the whelps are brought forth, the mother should have some gruel with the chill taken off, and, after twelve or fourteen hours, a little warm broth or milk. After this, she should be well fed upon milk, or broth with a little flesh mixed in it. For other particulars, see the general management of bitch and whelps, under the article Dog.

Sect. 3.—Rearing the Whelps.

The Young Hounds will require to be Rounded, which is an operation for the removal of a portion of their ears, so as to prevent their being torn by the briers and thorns of the woods they traverse. Removing the ear entirely does great harm, and the cropped terrier is almost useless in covert, from the water getting into the ear, and from the want of protection to the delicate outside skin. But there is the happy medium to be preserved, and this is effected by rounding off the tips of the ears, and leaving only enough to guard the interior. It is a very easy operation, and requires only a steady hand, and care to avoid cutting the two edges unequally long. The two layers of skin should be held firmly, and without allowing them to roll upon one another; and should then be cut through with a pair of sharp scissors. This should be done between the ages of three and six months; for earlier than that it is very difficult to cut off exactly the right quantity, as some ears grow very differently to others at various ages. The dew-claws also require removal, if not sitting very close to the leg; and in all cases the claw itself should be drawn out by the teeth or nippers. If the claw is very prominent, the whole had better be removed at the end of the first week. Before sending them out to their walks they should be branded, and duly entered in the list kept for the purpose. Now, also, the name should be given, selecting from the following list, which is equally applicable to the staghound, harrier, or beagle :—

Dog-Hounds.

A.
Able
Acid
Acorn
Actor
Adamant
Adjutant
Admiral
Agent
Amwell
Albert
Alderman
Alfred
Ambrose
Amorous
Antic
Anxious
Arbiter
Archer
Ardent
Argus
Ariel
Arrogant
Arsenic
Artful
Artist
Atlas
Auditor
Awful

B.
Bacchus
Bachelor
Baffler
Banter
Barbarous
Bardolph
Baronet
Beadsman
Bedlamite
Bellman
Benbow
Benedict
Blacksmith
Blarney
Blemish
Blucher
Blueboy
Bluecap
Blueman
Bluster
Boaster
Boisterous
Bondsman
Bonnyface
Bouncer
Bowler
Bragger
Bravo
Brawler
Brazenface
Brilliant
Briton
Brusher
Brutal
Burster
Bustler

C.
Caitiff
Caliban
Capital
Captain
Captor
Carrier
Carver
Castor
Castwell
Catcher
Catchpole
Catkiller
Caviller
Cerberus
Challenger
Champion
Chancellor
Chanter
Chanticleer
Charon
Chaser
Chatterer
Chieftain
Chimer
Chirper
Choleric
Chorister
Claimant
Clamorous
Clangour
Clarion
Clasher
Clinker
Combat
Combatant
Comet
Comforter
Comrade
Comus
Conflict
Conqueror
Conquest
Conrad
Constant
Contest
Coroner
Cottager
Councillor
Countryman
Courteous
Coxcomb
Craftsman
Crasher
Cricketer
Critic
Critical
Crowner
Cruiser
Crusty
Curfew
Currier

D.
Damon
Damper
Danger
Dangerous
Dapper
Dapter
Darter
Dasher
Dashwood
Daunter
Dealer
Dexterous
Dismal
Disputant
Doctor
Dorimant
Downright
Dragon
Dreadnought
Dreamer
Driver
Drummer
Dulcimer
Duster
Dustman

E.
Eager
Eagle
Earnest
Effigy
Effort
Elegant
Emigrant
Eminent
Emperor
Energy
Envious
Envoy
Erin
Errant
Esau
Excellent

F.
Factious
Factor
Falcon
Falstaff
Farrier
Fatalist
Fearnought
Ferryman
Fervent
Finder
Firebrand
Fisherman
Flagrant
Flasher
Fleece'em
Flinger
Flippant
Flourisher
Flyer
Foamer
Foiler
Foreman
Foremost
Foresight
Forester
Forward
Fowler
Fugleman
Fulminant
Furrier

G.
Gainer
Gallant
Galliard
Galloper
Gameboy
Gamester
Ganges
Garrulous
Gaylad
Gazer
General
Genius
Giant
Gimcrack
Glancer
Glider
Glorious
Goblin
Governor
Grampian
Grappler
Grasper
Griper
Growler
Grumbler
Guardian
Guardsman
Guider
Gulliver
Gunner

H.
Hamlet
Hannibal
Harasser
Harbinger
Hardman
Hardy
Harlequin
Hazard
Headstrong
Hearty
Hector

Heedful
Herald
Hercules
Hermit
Hero
Highflyer
Highlander
Hopeful
Hostage
Hotspur
Humble
Humorist
Hurtful

I.
Icicle
Idleboy
Ilex
Impetus
Impudent
Indian
Indolent
Inkerman
Ion

J.
Jailer
Jasper
Jerker
Jester
Jesuit
Jingler
Jockey
Joker
Jolly
Jollyboy
Jollydog
Jostler
Jovial
Jubilee
Judgment
Juggler
Jumper
Juniper
Juryman
Justice

K.
Kaffir
Kelpie
Kickshaw
Kingfisher
Kossuth

L.
Labourer
Lancet
Landlord
Landsman
Lanker
Lasher
Laster
Leader
Leveller
Libel
Liberal
Libertine
Lictor
Lifter
Lightfoot
Linguist
Listener
Lounger
Loyalist
Lucifer
Lunatic
Lurker
Lusty

M.
Malcolm
Mameluke
Manager
Manful
Mariner
Marksman
Marmion
Marplot
Marshalman
Martial
Marvellous
Masterful
Match'em
Maxim
Maximus
Meanwell
Meddler
Melton
Menacer
Mendall
Mender
Mentor
Mercury
Merlin
Merryboy
Merryman
Messmate
Messenger
Methodist
Mighty
Militant
Minikin
Miscreant
Mittimus
Monarch
Monitor
Motley
Mountebank
Mounter
Mover
Mungo
Murmurer
Musical
Mutinous
Mutterer
Myrmidon

N.
Naughty
Negro
Nelson
Nervous
Nestor
Newsman
Nimrod
Noble
Nonsuch
Norman
Novel
Noxious
Nubian

O.
Oberon
Oliver
Orderly
Orson
Oscar
Osprey

P.
Pagan
Pageant
Painter
Paradox
Paragon
Parallax
Paramount
Paris
Partner
Partyman
Peeler
Penetrate
Peregrine
Perfect
Perilous
Pertinent
Petulant
Phœbus
Piercer
Pilgrim
Pillager
Pilot
Pinch'em
Pincher
Piper
Playful
Playmate
Plodder
Ploughman
Plunder
Poacher
Politic
Pontiff
Potboy
Potent
Prater
Prattler
Prefect
Premier
President
Prevalent
Primate
Principal
Prior
Prizer
Proctor
Prodigal
Prompter
Prophet
Prosper
Prosperous
Prowler
Pugilist
Punster

R.
Racer
Radical
Rallywood
Rambler
Rampant
Rancour
Random
Ranger
Ransack
Rantaway
Ranter
Rapper
Rasper
Rasselas
Rattler
Ravager
Ravenous
Ravisher
Reacher
Reasoner
Rector
Redcap
Regent
Reginald
Remus
Resonant
Restive
Reveller
Rifleman
Rifler
Rigid
Rigour
Ringwood
Rioter
Risker
Roadsman
Rocket
Rockwood
Roman
Romper
Romulus
Rouser
Router
Rover
Royal
Rubens
Rubicon
Rudesby
Ruffian
Ruffler
Rufus
Ruler
Rumbler
Rummager
Rumour
Runner
Rural
Rusher
Rustic

S.
Sackbut
Sailor
Salient
Sampler
Samson
Sanction
Sandboy
Sapient
Saracen
Saucebox
Saunterer
Scalper
Scamper
Scapegrace
Scarecrow
Schemer
Schoolboy
Scourer
Scrambler
Screamer
Screecher
Scuffler
Searcher
Sermon
Settler
Shamrock
Sharper
Shifter
Shiner
Shylock
Signal
Singer
Singwell
Skirmisher
Smoker
Sober
Social
Solomon
Solon
Songster
Soundwell
Spanker
Sparkler
Special
Specimen
Speedwell
Spinner
Splendour
Splenetic
Spoiler
Spokesman
Sportsman
Squabbler
Squeaker
Statesman
Steady
Stickler
Stinger
Stormer
Stranger
Stripling
Striver
Strivewell
Stroker
Stroller
Struggler
Sturdy
Subtle
Succour
Sultan
Supple
Surly
Swaggerer
Sylvan

T.
Tackler
Talisman
Tamar
Tangent
Tarquin
Tartar
Tattler
Taunter
Teaser
Telegraph
Tempest
Terror
Thrasher
Threatener
Thumper
Thunderer
Thwacker
Thwarter
Tickler
Tippler
Toller
Tomboy
Topmost
Topper
Torment
Torrent
Torturer
Tosser
Touchstone
Towler
Tracer
Tragic
Tramper
Transit
Transport
Traveller
Trial
Trimbush
Trimmer
Triton
Triumph
Trojan
Trouncer
Truant
Trueboy
Trueman
Trudger
Trusty
Tryer
Trywell
Turban
Turbulent
Twanger
Tweezer
Twig'em
Tyrant

V.
Vagabond
Vagrant
Valentine
Valiant
Valid
Valorous
Valour
Vandal
Vanguard
Vaulter
Vaunter
Venturer
Venturous
Vermin
Vexer
Victor
Vigilant
Vigorous
Vigour
Village
Viper
Vulgar
Volley
Voltigeur
Voucher
Vulcan

W.
Wamba
Wanderer
Warbler
Warning
Warrior
Warwhoop
Waterman
Wayward
Wellbred
Whipster
Whynot
Wildair
Wildboy
Wildman
Wilful
Windsor
Wisdom
Woldsman
Woodman
Wonder
Worker
Workman
Worthy
Wrangler
Wrestler

BITCHES.

A.
Abbess
Abigail
Accurate
Active
Actress
Adelaide
Affable
Agate
Agile
Airy
Aline
Amaranth
Amazon
Amethyst
Amity
Angry
Animate
Anxious
Apathy
Arrogant
Artful
Artifice
Audible
Aunty
Awful

B.
Baby
Baneful
Barmaid
Baroness
Bashful
Bauble
Beauteous
Beauty
Beeswing
Beldam
Bellmaid
Betsy
Bilberry
Birdcage
Birthday
Blameless
Blithsome
Blossom
Blowsy
Bluebell
Bluemaid
Boisterous
Bonny
Bonnybell
Bonnylass
Boundless
Bountiful
Bounty
Bravery
Brevity
Bride
Bridesmaid
Bridget
Brilliant
Brimstone
Bryony
Busy
Butterfly
Buxom

C.
Capable
Captious
Capture
Careful
Careless
Carnage
Carol
Caroline
Caution
Cautious
Ceres
Chantress
Charity
Charmer
Cheerful
Cheery
Chirruper
Chorus
Cicely
Circe
Clarionet
Clemency
Clio
Cloudy
Clumsy
Cobweb
Columbine
Comedy
Comely
Comfort
Comical
Concord
Constant
Countess
Courtesy
Cowslip

Crafty
Crazy
Credible
Credulous
Crony
Cruel
Cruelty
Curfew
Curious
Currency
Cyprian

D.
Dabchick
Dainty
Daffodil
Dairymaid
Daisy
Dalliance
Damsel
Daphne
Darling
Darnel
Dashaway
Dauntless
Delicate
Desperate
Destiny
Dewdrop
Diadem
Diana
Diffidence
Diligent
Docile
Document
Dorothy
Doubtful
Doubtless
Dowager
Dreadful
Duchess
Dulcet

E.
Eagerness
Easy
Echo
Ecstasy
Egret
Elegant
Elfin
Elspeth
Emblem
Emerald
Empress
Endless
Energy
Enmity
Equity
Essay
Eulogy
Exquisite

F.
Fairmaid
Fairplay
Fairy
Faithful
Faithless
Falsity
Famous
Fanciful
Fancy
Fashion
Fatima
Favourite
Fearless
Festive
Fickle
Fidget
Fiery
Filagree
Fireaway
Firefly
Firetail
Flighty
Flipper
Flourish
Flurry
Forcible
Fraction
Frailty
Frantic
Freedom
Fretful
Friendly
Frisky
Frolic
Frolicsome
Fugitive
Funnylass
Furious
Fury

G.
Gadfly
Gaiety
Gaily
Gainful
Galaxy
Gambol
Gamesome
Gamestress
Garland
Garnet
Garnish
Ganymede
Gaudy
Gaylass
Gertrude
Ghastly
Giddy
Gipsy
Gladness
Gladsome
Glory
Gossip
Governess
Graceful
Graceless
Gracious
Grateful
Gravity
Grayling
Guilesome
Guiltless
Guilty

H.
Handmaid
Handsome
Happy
Harlot
Harmony
Harpy
Hasty
Haughty
Hazardous
Heatherbell
Hebe
Hecuba
Heedless
Heiress
Heresy
Heroine
Hideous
Holiday
Honesty
Hostile

I.
Icicle
Idleness
Impudence
Industry
Iris

J.
Javelin
Jealousy
Jessamine
Jessica
Jewel
Jocular
Jollity
Joyful
Joyous
Junket

K.
Keepsake
Kestrel
Kitten
Knavery

L.
Lady
Ladylike
Lapwing
Lavender
Laudable
Lavish
Lawless
Legacy
Lenity
Levity
Liberty
Lightfoot
Lightning
Lightsome
Likely
Lily
Lissome
Litigate
Lively
Locket
Lofty
Lollipop
Lovely
Luckylass
Lunacy
Lustrous
Luxury

M.
Mabel
Madcap
Madrigal
Maggoty
Magic
Magnet
Malice
Marigold
Marjoram
Martlet
Matchless
Mayday
Melody
Mendicant
Mermaid
Merriment
Merrylass
Mindful
Minion
Miriam
Mischief
Modish
Monody
Music

N.
Narrative
Neatness
Necklace
Nectar
Needful
Negative
Nettle
Nicety
Nimble
Niobe
Noisy
Norma
Nosegay
Notable
Notice
Notion
Novelty
Novice
Nutmeg

P.
Panic
Panpipe
Parasol
Parody
Passion
Pastime
Patience
Patter
Peeress
Pelican
Pensive
Perfect
Perfume
Phœnix
Phrenzy
Placid
Playful
Playsome
Pleasant
Pliant
Positive
Precious
Prettylass
Priceless
Priestess
Probity
Prudence

R.
Rachel
Racket
Rainbow
Rakish
Rally
Rampish
Ransom
Rantipole
Rapid
Rapine
Rapture
Rarity
Rashness
Rattle
Ravish
Redbreast
Relic
Remedy
Reptile
Resolute
Restless
Revelry
Rhapsody
Riddance
Riot
Rival
Roguish
Rosalie
Rosebud
Rosemary
Ruby
Ruin
Rummage
Rumour
Ruthless

S.
Safeguard
Sanguine
Sappho
Saucebox
Science
Scrupulous
Seamstress
Shrewdness
Skilful
Slender
Songstress
Spangle
Specimen
Specious
Speedy
Spider
Spinster
Spiteful
Spitfire
Sportful
Sportive
Sportly
Sprightly
Stately
Stoutness
Streamer
Strenuous
Strumpet
Suity
Sunshine
Surety
Susan
Swallow
Sweetbriar
Sweetheart
Sybil
Symphony
Syncope
Syren

T.
Tattle
Teacher
Telltale
Tempest
Tempter
Termagant
Terrible
Testy
Thankful
Thoughtful
Tidings
Timbrel
Toilet
Toilsome
Topsy
Tractable
Tragedy
Transport
Treachery
Treasure
Trespass
Trial
Tricksy
Trinket
Trifle
Trivial
Trollop
Troublesome
Truelass
Truemaid
Trusty
Tuneful
Turbulence
Twilight
Twinkle

V.
Vanquish
Vanity
Vehemence
Vehement
Velvet
Vengeance
Vengeful
Venomous
Venture
Venturesome
Venus
Verify
Verity
Vespa
Vestal
Vicious
Victory
Victrix
Vigilance
Violet
Viperous
Virtue
Virulent
Vitiate
Vivid
Vixen
Vocal
Volatile
Voluble
Vulture
Vural

W.
Waggery
Waggish
Wagtail
Wanton
Warfare
Warlike
Wary
Waspish
Wasteful
Watchful
Welcome
Welfare
Welldone
Whimsy
Whirligig
Whirlwind
Widgeon
Wildfire
Willingmaid
Wily
Winsome
Wishful
Witchery
Witching
Wonderful
Woodbine
Worry
Wrathful
Wreakful

It is the custom to name all the whelps of a litter after the initials of sire or dam; but it should always be the endeavour of the person who chooses the names to select those as much unlike one another as possible, in order that the puppies may distinguish them with more ease.

THE WALKS FOR THE YOUNG HOUNDS should be chosen in such situations as that they shall be accustomed to all sorts of company, from children to horses, and shall not consequently be shy and retiring. Boldness in the fox-hound is an essential point, and a shy one is utterly useless; he will not pass through a town, nor even face a cow feeding, but is constantly incurring the wrath of the second whip, from his lagging propensities. If a walk at a farmhouse can be procured so much the better, or at a butcher's or village

innkeeper's. Wherever they are reared they should be well fed and lodged, and not starved into the rickety frames which one often sees. Here they remain till after the hunting season is over, when they are brought back to the kennel, and at once are submitted to its discipline.

When first returned to Kennel the young hound is generally sulky at losing his liberty, and often refuses his food for some days; this does no harm, and no notice need be taken of him, when, in all probability, in the course of a few days he will recover his appetite and spirits. For some little time a low diet, with an occasional dose of castor-oil, should be adhered to, because the change is considerable from the free roving life of "the walk" to the close confinement of the kennel. Little or no flesh is required at this time, and the free use of vegetables should be encouraged. For some little time these young hounds will often refuse to notice their new master, but by his using kind words and feeding them himself, they soon attach themselves to him, and may then be treated like any other member of this great family.

Breaking from Riot should be commenced from the very first day that the young hounds are taken out to exercise. This should be regularly carried on every day during the summer months, both with young and old; and all the young and unsteady hounds should be in couples, always putting together a young and an old hound, and dogs with bitches. In this way they may at first be taken out along the adjacent roads, choosing the more private ones in preference, till the young hounds know their names and attend to a rate pretty quickly. At first, until they are accustomed to their new huntsman, only eight or ten couple should be aired at a time; and for a day or two they should only be walked out in the paddock in couples, and caressed and fed by the huntsman. As soon as they seem to be pretty ready to own his voice, and to follow him at heel, he may take them into the roads, and after a time, varying according to circumstances, he may gradually increase his numbers, till he can venture to take out all the pack, unless a very large one. When quite tractable on the road, they should be walked through sheep and deer, beginning again with small numbers at first, and gradually, as before, increasing them. With sheep and deer, at first *all* should be in couples, and, after a while, a few at a time should be released; and when found to take no notice, they may be coupled again, and others set at liberty, till all have had the chance of showing their propensities without restraint. In this way, during the summer, the huntsman, by his kennel-management, already described, and by exercise as here detailed, teaches his pack obedience, and breaks them from riot of the above description—viz., from sheep and deer, which may almost always be met with in some park adjacent. Deer must specially be guarded against, because the scent is so tempting to all hounds, and seldom a week passes in the hunting season without the run leading through a deer park. Very often, too, they may be broken from hare and rabbit-riot, during the summer, to a certain extent; but too much must not here be attempted, as the young hounds are easily made shy of hunting altogether if they are continually being rated, and never encouraged. Until, therefore, hounds are entered to their particular game, they must not be too much rated and broken from "riot;" but sheep and deer being of great value must at once be protected; and on no account should cub-hunting be commenced till all the hounds are quite steady from them. A neglect of this precaution has led to great expense and annoyance; for while exercise only is the motive, couples may be kept on, but when hunting itself is going on they cannot be so confined, and the hounds having no mechanical restraint are much less manageable. If now they begin to run a flock of sheep or a herd of deer, they generally end by pulling down one or more victims. When once this blood has been tasted, there is no saying when and where the passion may return, and the hound, apparently cured by the whip, is never safe from a repetition of his frolic. Stop the tendency therefore thoroughly, early in the summer, and never mind the fear of making the young entry shy. If they are well-bred, they will soon find out that something is meant when they are thrown into covert, and they will readily join in with their fellows when their game is afoot, though

perhaps at first shy from fear of the lash.

THE AMOUNT OF DAILY EXERCISE during the summer months should be very considerable, since the hounds are only walked out, and seldom trotted. The huntsman should take them out early in the morning on the road for a couple of hours, and may also do the same in the evening in the paddocks, or on any grass hill of which he can command the use. Nothing but the time of the men ought to limit this essentially healthy part of the management of the pack; and as foxhounds are a very high-couraged set of animals, unless their energies are suffered to expend themselves in this way, they will, in the first place, be always fighting in kennel; in the second place, they will be under very little command; and in the third, they will be out of health. In the morning road-work the men should be on their horses, but in the evening on foot. In all cases when out with hounds they should have their hunting-coats on.

SECT. 4.—ENTERING YOUNG HOUNDS.

In grass-countries by the month of August, in arable-countries as soon as the corn is cut, and in the large woodlands even before, the young hounds should be entered to fox. If the pack is altogether new, it will be prudent to take the old hounds out first, without any of the young entry, since many of them are sure to be altogether useless—some from an incurable tendency to "riot," others from "babbling" propensities, and others again from hanging in covert, skirting, or slack hunting. There will, therefore, be quite enough to do for some days, to get the old hounds handy, and to decide upon which are so incurably bad as to be wholly useless, and even injurious to the young hounds. Some of these vices certainly do not show themselves plainly in the early cub-hunting; but the experienced huntsman may make a very good guess even on the first day a fox is found. He must not expect too much, but must be contented if he can get from fifteen to twenty couple of hounds tolerably steady from riot, and with hunting enough in them to drive a fox pretty hard in the woodlands. He need not yet care about the hounds "packing" well, nor can he yet judge of their powers in this respect; all that he has to do is to get them to hunt their own game steadily and perseveringly, to avoid "skirting," and to turn to his horn quickly and readily. The hunting tendency is partly dependent upon breeding, but much must be owing to early education. It is generally too late with draft-hounds to instil hunting into them; but if they are slack for want of blood only, perseverance, even with a bad pack of draft-hounds, early in the season, may ensure a few cubs being run into and broken up somehow or other. This will often, with a persevering and encouraging man, totally alter the disposition of a hound; for nothing is so infectious as the *manner* of the men. If they are slow and careless in cub-hunting, so will the hounds be, while if they are bustling and energetic, these qualities are rapidly imbibed, and the whole aspect of the pack is changed. I have seen this effected in a very short time when a slack pack has changed hands, partly from higher feeding, but chiefly from the determined energy of the men; they have become lively and full of dash, instead of looking dull, and hunting like slow harriers. The old hounds must at once be well flogged, if not free from riot, and the incurably bad ones must be drafted at once before the young hounds are entered.

WHENEVER THE OLD HOUNDS ARE TOLERABLY STEADY AND HANDY, but not till then, begin to think of entering your young ones; taking out five or six couple of them along with the steadiest and best hunters of your old pack, and remembering that *your chance of good sport through this season and the next* depends more upon your young entry than upon the old draft-hounds. No huntsman makes the mistake of parting with old hounds, unless they are either infirm from age, or are bad hunters in some form; but many men draft young hounds from their looks not pleasing the eye, or from their being too high or too low, or not being "suity," as it is called, and yet in doing so perhaps give you the best blood of their kennels, and a hound which will do you as good service as if picked out of ten thousand. Cherish, therefore, this young entry, and sacrifice time, cubs, and old hounds to make them perfect. On the first appearance of the young hounds, it is very desirabe to find a

cub as quickly as possible, for as they are sure to run something or other, if they have any sport in them, they will be likely to run "riot" if nothing else turns up; and the whip is a poor introduction to their first day's sport. Some even go so far as to wait till the old hounds have found before they give the young ones liberty, keeping them in couples outside the covert till the cub is on foot. This I believe to be a very good plan, but as it is a troublesome one, it may not suit the notions of all. When once the old hounds are running a cub hard, and the scent is strong, the young ones rapidly chime in, and there is very little more trouble in urging them on. Hallooing, however, should be indulged in to any extent; encouragement is the order of the day, and too much devil can now hardly be infused. The sound of the huntsman's voice, if with his pack, also keeps them together, and prevents the young ones from losing themselves, which they might otherwise easily do. It should be understood that this cub-hunting begins at three or four o'clock in the morning, when, even in the summer, the air is cool and refreshing, and scent lies pretty well—though, the ground being generally dry, it is not so good as in the autumn. After the cub is killed let the huntsman lay hold of him, and take him into the first open space he can find; then, before the blood of either fox or hounds has had time to cool, let him excite the hounds by a few cheers—not too long continued, however—and throw him to them. After this first-blooding it is better, if the morning is not far advanced, to draw for a fresh fox; choosing, if possible, an unsoiled part of the woodland, and proceeding to this chiefly in order to have an opportunity of rating the young ones for speaking to "riot" while under the fresh recollection of the encouragement which they have received in their entry to their own particular game. Much punishment should be avoided; a severe rate or two generally suffices; and if possible the whip should not be used so soon as this. If, however, a young hound chops a hare or rabbit, and will not drop it, let him have a taste of the whip, and be compelled to leave his dainty meal undevoured. If another cub is soon found, let him be killed also, if possible, or else marked to ground, and the hounds well encouraged after doing so; but do not by any means tire out the energies of the young entry, rather letting them leave off while still feeling a zest for their new sport. This is a very important consideration, as all means should be taken to inculcate a desire for the peculiar kind of game to which they have just been introduced.

Sect. 5.—Regular Cub-Hunting.

This should now be entered upon in earnest, and should, in September and October, be followed two or three times a week, or, with a very large entry, still oftener. Upon it depends the sport to be obtained during the coming season, not only as regards the hounds, but also in reference to the foxes. It should be known that cub-hunting and regular fox-hunting have two entirely different objects; the former being to prepare for future sport, the latter to afford present amusement to the field of sportsmen attending the meet. Cub-hunting, therefore, is merely a kind of breaking-in of the hounds and men to their respective places; yet some sportsmen are particularly fond of this business—for sport it is not intended to be. I can easily understand this, when they are interested in the future success or failure of the pack; but cub-hunting *per se*, without any reference to the future, is, to my taste, a most tiresome affair. First of all it requires a strong temptation to induce me to leave my bed at one or two o'clock in the morning, in order to reach a woodland-meet ten or fifteen miles off; secondly, there is little pleasure in crashing through thick tangled underwood, which at this time and season is heavy with dew on the leaves; and thirdly, the ground is so hard that a gallop is out of the question, and anything like a leap destructive to the joints of the horse. Few, therefore, would willingly undertake the task; but, nevertheless, it must be perseveringly conducted as often as I have stated, in order to effect two principal objects; first, the dispersion of the foxes; and secondly, the blooding and entering of the hounds.

The Dispersion of the Foxes is one of the most important features in cub-hunting, and one which is, perhaps, too often neglected. Foxes naturally

prefer large woods, and especially those which so often are connected with others of a similar character. There are many districts where the soil is so unfit for grass, or to bear cereal crops, and is yet so well calculated for timber trees, that it is and has long been devoted to that purpose. These extensive woodlands are generally on the outskirts of the hunting country, and are often far removed from any populous neighbourhood; hence, they are chosen by the foxes; and these animals are often to be found in great numbers in these secure fastnesses, at a time when they are scarce enough in the best coverts. Now, if these large woods are never thoroughly routed during cub-hunting, there is seldom much chance of doing this afterwards, because they are always unpopular meets, and are only had recourse to for want of foxes in coverts likely to afford good runs. The huntsman, too, often likes an early good run from a good covert, in preference to a tiresome and hard morning's work in the thick underwood; and if his heart is not in his work, or if he is not compelled to do so by his master, he will avoid trouble, and instead of doing good for the future, and driving out the foxes into the small coverts, he actually drives them back again into the large woods. This I have often known done, and especially by young masters themselves, who often like to go out cub-hunting, and have a quiet little spin to amuse themselves with; but such masters will seldom show good after-sport, and only eat bad pudding in September intstead of getting it good in November or December; for no run early in the season can be compared to a winter one, when the ground is cool, the scent good, the turf soft and elastic, and the fences may be taken by the hunter without fear of injury. Let, therefore, all masters, as well as men, bottle up their impatience till the proper season, and take care to avoid cub-hunting for pleasure. They should never enter, on any consideration, a favourite spinney or small covert, in the middle of a good hunting country, but should always stick to those woodlands where foxes are sure to breed, and where they may be killed in great numbers without injury to future sport; whence, also, they should be systematically driven. These large woodlands are almost always on the boundaries between two countries, and sometimes are hunted by two packs. In such a case every master will endeavour to drive out the foxes into his own country, and for this purpose will draw towards it, not entering them on his own side, but commencing to draw them as far as possible from it, and driving all out towards his own dominions. Much, perhaps, cannot be effected in this way; but it should be tried, nevertheless, for without a trial nothing can ever be done.

THE NECESSITY FOR BLOODING THE HOUNDS is the second and most immediate object of cub-hunting. Without blood even the pack in regular work soon becomes slack, and the hounds hang back, instead of getting forward with the true foxhound dash. Beckford relates a case in point, in a modest note, to the following effect:—"A pack of hounds which had been a month without registering a kill, at last ran a fox to ground, which the men dug out and threw to them. After this, their spirits were so renovated, that they killed seven days in succession." Now this *might* have been a run of luck, but most probably the marked change in their success was due to the cause to which he assigns it. However, all practical men are agreed that blood must be had even during the season; then, how much more necessary must it be before hounds are made to know their business, to give them blood.

AS SOON AS THE YOUNG HOUNDS ARE DULY ENTERED, and have had a fair share of blood, the pack may be hunted exactly as in the season, due reference being had to the remarks already made on the early hour necessary, on the propriety of drawing only the large woodlands, and on the imperative want of blood, almost daily, which must be had, somehow or other, either by marking to ground and digging out, or by chopping, or some other means. At this time, even bag-foxes are justifiable; for it is not until hounds are rendered fastidious by success that they turn up their noses at bagmen with disdain. These animals cause disgust, because their scent, instead of possessing the due amount of fox-flavour suited to the hound's nose, has became rank by confinement and fear, coupled with constant irritation. The fox, in common with the polecat,

cat, and all others of his kind, has a reservoir of offensive scent under the root of the tail, where it is secreted by certain glands for the purpose. When these animals are annoyed, as they are in confinement, this scent is found in large quantities of a rank nature, and the consequence is that they smell, or rather, in plain English, they stink most abominably. But when young hounds are first entered they *can* hunt this strong scent better even than that of a wild fox, and they do so because they have not yet learnt to know better. If, therefore, wild cubs cannot be found, a bagman or two must be obtained, and turned down before the hounds, and they will afterwards work with redoubled zest. The bagged fox should be turned into some small covert free from wild foxes, as the hounds will be thereby encouraged to draw, which is one of their most disagreeable duties.

The management of the hounds in drawing, &c., will come under consideration in the following chapter devoted to regular hunting.

CHAPTER V.

FOX-HUNTING (*Continued*).

Sect. 1.—Preparations for Hunting.

Several Duties devolve upon the Master preparatory to a hunting-day:—First, he should have previously given the usual notice of the meet; and it is advisable that this meet should be so fixed as to suit two or more coverts if possible, so that every attendant shall be obliged to appear at the place appointed, foot-people included. If this is not done, a great number will assemble at the covert to be drawn, rather than at the meet, and often they surround it so that no fox can break; but by this precaution, on taking the hounds on to draw the covert, the foot-people cannot anticipate them, and a fox has time to make his point before he is headed. Secondly, the hunting pack must be drafted on the previous day, fed, early or late, according to the distance they have to travel, and separately shut up for the night. When drafting the hounds for the morrow's hunting, a list should be entered in the huntsman's book; and he should take a copy of this with him in hunting—so should the master, if he at all interferes in these matters. In making this draft it is usual for the huntsman to select the hounds which are the best suited to the particular country which is to be drawn, if he has sufficient numbers for that purpose; and also to proportion his pack to the strength and extent of the coverts. Thus, for an open country, with nothing but small spinnies, eighteen or twenty couple are amply sufficient, while for large woodlands twenty-four couple will not be too many. Thirdly, the earth-stopper and keepers should have orders as to what earths to stop, and whether to stop at night or in the morning, according to the season; for if in the spring, they must not be stopped too long, or the cubs may be starved, if there are any. All these preliminary duties should be carefully attended to, since a failure in any will affect the chance of sport on the morrow.

Sect. 2.—Going to Covert.

According to the distance from the meet must the start be made from the kennel. About six or seven miles an hour is the pace at which hounds generally travel on the road, except in very wet days, when eight miles an hour will better serve to keep hounds and horses from feeling any ill effects from this disagreeable attendant upon hunting. The hounds seem to know the hunting days, and are as impatient as the most ardent tyro. They are all life and animation on first bursting out of kennel, and are the better for a turn in the paddock to empty themselves before getting on the road. The men should then mount and proceed on their way, the first whip

leading, with the huntsman in the middle of his hounds, and the second whip bringing up the rear. This order is maintained until their arrival at the meet. It is always advisable to avoid the crowded streets of towns as far as possible, for fear of accidents, as it is not always that the hounds can be safe from the careless driving of carts or carriages, whose charioteers will not always pull up for them to pass. When arrived at the meet the men may tighten their girths, &c., but the hounds should be kept moving on the grass, and not allowed to lie about, except it be in the very warm and dry weather which is sometimes experienced at the beginning or end of the season. Hounds in going to covert are very apt to pick up bones, and will sometimes, in their greediness for these unwonted dainties, swallow large ones. This should be prevented by the second whip, as their possession only leads to delay and quarrelling; and if of large size, and they are swallowed, they do not improve the wind.

Sect. 3.—Drawing.

No part of a huntsman's duties is so often performed in a slovenly manner, and yet none is of more consequence, than the drawing of coverts. It is so unpleasant to all, that it is no wonder it is shirked; but, nevertheless, it is like business with regard to pleasure, it should come first in importance as in precedence. One of the most beautiful sights in fox-hunting is the perfect drawing of a pack of hounds. I have rarely seen it to perfection, because it is seldom that the eye can command the covert so as to get a bird's-eye view. But in the Heythrop country some of the best coverts are merely willow beds under the sides of the hills; and there I have seen the hounds, when under Lord Redesdale's mastership, drawing in a style which elicited my admiration, as well as that of all the field. Every square yard of covert seemed to have its allotted hound, and they drew from one to the other, and back again, so as to leave no single patch of ground untried. No hound could be seen following another, but each appeared to cautiously avoid this common defect. It happened on one occasion that this was conspicuous, through a long series of blank-draws, on the same day, and still, even to the last, these persevering hounds spread out and drew their ground as closely as ever. It was, I recollect, a great disappointment to me to meet with a blank-day, after travelling more than forty miles to the meet, especially as, from the rare occurrence of such an event, I did not expect it; but the gratification afforded by the perfection of the drawing quite made up for the loss of the expected run. The first thing the huntsman does is to send the pack into covert with a wave of the hand, which is all the signal that ought to be required; then, entering himself, he takes the line which he wishes his hounds to follow, keeping a little behind the body of his hounds, but well with them. Much will depend on the size of the covert as to the proceedings from this time. If large, the draw is made up-wind, and the first whip is sent on to the point where the fox is most likely to break, in order to view him away, and save time by hallooing, which signal is of course at once acted on by the huntsman. If the woods are very large, it is of no use for the first whip to go to any *one* point outside—he must rather select some ride or break which the fox must cross at some distance ahead of the body of the hounds, and, as they approach, quietly slip off to a second and more distant one. He will thus have a good chance of viewing the fox as he crosses, and at last may post himself at the outside, at the point where foxes usually break from that particular covert. I need not say that, while engaged in this occupation, strict silence should be kept, and no one should approach the whip for any purpose, much less enter into conversation with him. Some masters, when drawing large coverts, station five or six men in different parts, and give them a separate signal. This is of great use, and is certainly carrying out Beckford's rule to the fullest extent. In this case, also, much noise is to be avoided, as it is not desirable to drive the fox out of his kennel far before the hounds; the second whip should be a little in the rear of the huntsman, and should urge forward the lagging hounds. It is most important that the huntsman should himself penetrate the thickest parts of the covert; it is here that the fox will most probably be lying; and many a one has been drawn over unfound, from

the dislike of the huntsman to set the example to his hounds. They will go anywhere with encouragement; but a slack huntsman is soon imitated, and if he leaves untried the thick part of the underwood, so will his pack. The field seldom can judge of these things, because they seldom are where they should be, in covert, but are talking, laughing, and cigar-smoking, often where the fox is most wanted or most likely to break. If they would all enter and assist the huntsman inside, they would be as useful as they now too often are the reverse. As soon as the first challenge is given, the first whip should be all attention to his duty, and carefully watch, by eye and ear, for his charge's appearance. If he sees him, no notice should be taken till he has reached the first fence from the covert; but as soon as this has been gained, he should screech a halloo in such a way as to bring every hound, with the huntsman, to the spot in less than no time. Thus is a fox well found—which is the first item towards killing him. If, however, the covert is small, it is not necessary to take all these precautions; but, the huntsman entering with his hounds, the whips may each take the skirts outside the fence, so as to see the fox break before them, driving every hound which appears outside into covert; and thus, with as much noise as they like, the spinney or gorse may be threaded. Here the fox seldom gets away far enough before the hounds to require caution; and the moment the scent is owned, they settle to it, and are away.

But it often happens that foxes in large coverts when first found, instead of breaking at once, run ring after ring inside, and at last break down wind, at the point where the hounds entered. These are generally foxes which have been unkennelled just before the hounds, and perhaps headed by the whip, or by some other person who is trying to be over-clever. Sometimes these rings are repeated so often, that the whole covert is foiled by the hounds so constantly running over the same ground, and the consequence is that they cannot hunt a yard. This is a most annoying affair, and tries the temper of all parties more even than a blank-draw. Whenever it happens, and the hounds begin to throw up, and really *cannot* hunt, it is better to take them away to some other covert than to persevere in this hopeless pursuit.

Sect. 4.—The Run.

"Gone Away! Gone Away!!" resounds through the covert, and every nerve is strained by masters, men, hounds, and field to fill their respective stations with due credit. The first whip now is a gentleman at large in comparison with his previous duties, and need only ride so as to be at hand in a moment, in case of difficulty. He should now carefully husband the powers of his horse. The second whip should bring up the tail hounds and see that none hang in covert, using his whip and tongue pretty freely to compel all to get "forrard," which is constantly now to be in his mouth. Thus they stream over hill and dale. After leaving the covert the huntsman gives a few notes on his horn, and a cheer or two; then places himself by the side of his hounds, carefully watching them, and taking advantage of every bend in the leading hounds to cut corners and thus be with them. He thus sees when and where the scent fails in case of a check, and is able to notice any facts which may assist him in his cast, is necessary; as, for instance, the presence of sheep, or deer, or a plough at work, or a sheep-dog, or the scent ceasing at a road or river, or fifty other such occurrences. Upon these facts, trifling as they appear to unlearned eyes, the skilful huntsman founds his calculations, and acts according to them. At this time the master should be in the rear of his huntsman, and ready, if necessary, to restrain the field from pressing upon the hounds. Presently a check occurs, and, "Hold hard, gentlemen!" should be the order from the master before mischief is done. The hounds now, if used to cast themselves, will do so without a moment's loss of time, and spread right and left, or wheel in a body, in order to recover the scent. It is extraordinary how clever some hounds are in this self-casting; and how, if left to themselves, they try every stratagem likely to occur to a dog's imagination. But there are many facts which they do not grasp, and of these the huntsman takes advantage; nevertheless, I believe that, if left to themselves, hounds would in the long run kill more foxes than if interfered with too much. Here, as in every pursuit, moderation is the great virtue, and the huntsman who interferes at the

right time, and then only, is the man who is to be applauded. But though hounds when left to themselves will kill their foxes, yet they do not kill them *secundum artem*, because the hunting of the fox is now considered to be a compound operation, partly canine, but partly human; and therefore if the biped is ignored by the quadruped, and the latter can do without him, the only party who can use his tongue in intelligible language is sure to throw it pretty freely.

THE FIRST CHECK is the trial of both hounds and huntsman. Time is now precious, for the fox is travelling; but "most haste is often worst speed;" if, therefore, nothing very evident presents itself to the huntsman as the cause of the check, by all means let the canine instinct have fair play—for a very short time at all events—and then cast them in favour of some reasonable proceeding which the huntsman's brain may have devised, as that which the fox has employed in his defence. Now the scent is either hit off, or fails altogether; and, in the latter case, what is to be done? Either wait for a "halloo," or at once lift the hounds to the point which the fox is most likely to make, and this is generally the nearest covert. Halloos are ticklish affairs, and the man who attends to them indiscriminately, when he does not know by whom they are given, is sure to mislead himself and his followers in nine cases out of ten. As long as the scent is owned it is better to work it out, unless a halloo which is to be depended on is heard, and then it should certainly be attended to; but if hounds are lifted from the scent and disappointed, they soon become slack, and lose that confidence in their huntsman which is the strong link between him and them.

But a common accident occurs perhaps in the run—the hunted fox is CHANGED for a fresh one. It happens, unfortunately for foxhounds, that the fox, unlike the deer, loses scent as he goes on; the deer, as he warms, sweats and emits a very strong scent with it, which falls on the ground, and increases mile by mile; on the other hand the fox, like the dog, its congener, never sweats, and what scent it emits is gradually lost during the progress of the chase, becoming fainter and fainter, though generally lasting for the length of a run. Hence, while the deerhound sticks to the hunted deer, by preference for its scent, the foxhound is tempted by the fine fresh scent of a newly-roused fox to take after him in preference to the sinking animal before him. Hence the difficulty in which the huntsman is placed, for the natural powers of the dog would here mislead him, and it is in this predicament that foxhounds most want his aid. For this also he must always be on the look-out, especially in covert, when running his fox through. During this time it is very important that he should be with them, and that his first whip should be on the other side of it, in order to view any fox which breaks, and decide whether he is the hunted one or not, whilst at the same time he may be able to halloo forward the huntsman and hounds, if all is right. But there are some signs which may indicate the hunted fox, as, for instance, the following:—Supposing the hounds divide, then the huntsman should be able to know in which lot are the leading hounds at the time of the division; to these he should stick, regardless of those who were skirting at the time; and the whipper-in should stop the others, if possible, and bring them to him. During a division the second whip should wait anxiously for orders, and be ready to act in a moment when he sees to which side the huntsman is leading. Now all goes on again, and the hounds are running breast-high; soon they press still more eagerly forward, and the huntsman can perceive the fox hard pressed only a field before him: at this time he fancies that his prize is won, and halloos and screams to encourage his hounds, which then certainly do not want it. Alas! his hopes are damped, for, after carrying on to the middle of the next field of turnips, they throw up their heads, and cannot own the scent. What can have happened! The fox *must* have lain down in the hedgerow, or run down the ditch; but the horsemen are so forward that all idea of hunting back for him is out of the question, and the hounds must be lifted to the hedge. Here, after a careful cast, he is hit off, and at last run into only a hundred yards or so from the line, being fairly blown, and lying in the ditch.

Sect. 5.—The Kill.

It is usual, when hounds have killed their fox, for the huntsman to dismount and get in among them, for the purpose of laying hold of the fox and removing it, in order to "worry it." This done—in order that the hounds may recover their wind, and that the tail-hounds shall be encouraged as well as the leaders—the fox is held aloft, and the huntsman or whip gets into a tree, or on a high bank, holding the fox towards the hounds. The cheers and noise are then redoubled, and the baying of the hounds in addition constitute a chorus most gratifying to the sportsman's ear. Presently the fox is thrown among the hounds, and soon torn limb from limb, and eaten.

Such is the finale of this exciting sport, in which the energies of so many have been long engaged.

Sect. 6.—Running to Ground.

This happens sometimes as a finale to a run, instead of a kill or losing a fox, and is certainly a better finish than this last conclusion, the most unsatisfactory of all to the good sportsman. When hounds have marked their fox well, and there is no doubt about his having gone to ground, they may, after some few minutes, be taken off to some fresh "draw," or home, if the day is too far gone. Sometimes, however, it is desirable to dig out or bolt the fox, when hounds have been short of blood; and then, a terrier having been procured, he is put in, and soon pins the fox in some corner where he is heard baying him. Over this point the spades should be used, and soon come down upon him in the ordinary way. Occasionally, however, though rarely, the fox is bolted by the terrier, and may even run the gauntlet of the hounds, and escape, as has happened on some occasions. The use of the terrier is to mark the exact situation of the fox, and to prevent his digging on further, which he will often do in sandy soils. Sometimes in shallow spouts or drains a terrier may be made to lay hold of the fox, and, by withdrawing him, the fox will be brought out. If he can be reached, a whip-thong should be first introduced, in the hope of taking off the fox's attention from the dog, who has then a better chance of escaping his teeth.

Sect. 7.—On Scent.

No single subject connected with hunting has received so much attention as this, and for this simple reason, that none is so difficult to settle, from an ignorance of the laws which govern it. But not only do we know nothing of its laws, but we also are at sea with regard to facts, for of these we have none upon which certain dependence can be placed. One party asserts that different foxes have different scents; and consequently that scent varies with the individual fox; but, says another, "scent varies in a few minutes with the same fox—then how is the individual the cause of the variation?" There can be no doubt that this often happens. We have all often seen on the advent of a hail-cloud, scent melt away as if by magic; although over the same country it was previously a good one. But what is there that we have not seen? that is the question in reference to scent. One thing may be said—viz., that we have seen no one fact with regard to scent which could be considered so constant as to form the basis of a rule. Is even "the southerly wind and the cloudy sky" a certain prelude to scent? I trow not; and I should be sorry to depend upon it. Living for many years in a bad scenting country, I have been saluted on all occasions with prophecies as to scent; but never did I find the man whose foretellings were worth a farthing. Scent must be either good or bad or indifferent on any given day; and therefore it is an even chance that any opinion given beforehand will be right, because the indifferent scent will do for either, and will be claimed by both parties. Yet I never knew any man receive general credit for knowing anything on the subject, practically.

I believe, however, that scent really does depend upon the individual fox, and moreover, that this scent is constantly varying with his hopes and fears. My impression is, that it is only partially dependent upon his skin, and that when that only emits the scent hounds have a difficult task. Did any of my readers ever catch a

cat in a trap set in a room? If so, they will surely remember the rank scent which pervaded that room; and which was not produced by the skin of the cat, but by its anal glands. So with the fox. When first disturbed he emits a considerable quantity of this scent, and if hard pressed at first, it is produced in great quantities, and to such an extent as to enable hounds to hunt breast-high; hence the advantage of pressing him early, for the more he is pressed the better scent he gives; but if this scent is gradually and slowly emitted, as it is when he is suffered to go his own pace without fear, the result is that the hounds are less and less able to own it, and he has a fair chance of escaping. Again, supposing a change of atmosphere from a cloud, or whatever other cause may produce it, these glands suddenly cease to emit their scent, and the change is as rapidly transmitted to the hunting of the hounds. The soil and air have much to do with the "bad scent," and with the skin-scent, but with this glandular scent his fears and anxieties are the chief agents; or, in the state of repose, his hopes and desires. This theory will, I think, explain some of the anomalies of scent, but that it will do away with all difficulties is beyond my fondest fancy.

When we know all the intricate laws connected with and governing the electrical condition of the air—that called ozone and the laws of storms—we may hope to improve our knowledge of scent; but perhaps then it may elude our grasp. If, however, attention is paid to nature, it will, I think, be found that, however useless in practice, the above is the true theory of scent as regards the fox. At all events it explains some of the facts which before were at variance with each other; but it will only explain the strong variations in scent, and will not affect the ordinary rules which Beckford gives, and which every one re-echoes, though not exactly believing in them. Such, however, as they are, they should be known, and are given by him as follows:—

"It depends chiefly on two things—*the condition the ground is in, and the temperature of the air;* both of which should be moist without being wet. When both are in this condition the scent is then perfect, and *vice versâ* when the ground is hard and the air dry, there seldom will be any scent. It scarcely ever lies with a north or an east wind; a southerly wind without rain, and a westerly wind that is not rough, are the most favourable. Storms in the air are great enemies to scent, and seldom fail to take it entirely away. A fine sunshiny day is not often a good hunting-day; but what the French call *jour des dames*, warm without sun, is generally a perfect one—there are not many such in a whole season. In some fogs I have known the scent lie high, in others not at all; depending, I believe, on the quarter the wind is then in. I have known it lie very high in a mist, when not too wet; but if the wet should hang upon the bushes it will fall on the scent and deaden it. When the dogs roll, the scent, I have frequently observed, seldom lies—for what reason I know not; but, with permission, if they smell strong when they first come out of kennel, the proverb is in their favour, and that smell is a prognostic of good luck. When cobwebs hang on the bushes there is seldom much scent; during a white frost the scent lies high, as it also does when the frost is quite gone. At the time of its going off scent never lies; it is a critical minute for hounds, in which their game is frequently lost. In a great dew the scent is the same; in heathy countries, where the game brushes as it goes along, scent seldom fails; when the ground carries, scent is bad, for a very evident reason, which hare-hunters, who pursue their game over greasy fallows and through dirty roads, have great reason to complain of. A wet night frequently produces good chases, as then the game neither like to use the covert nor the roads. It has been often remarked that scent lies best in the richest soils, and countries which are favourable to horses are seldom so to hounds. I have also observed that in some particular places, let the temperature of the air be as it may, scent never lies." Beyond this nothing, as far as I know, has been added to our knowledge of the laws of scent.

Sect. 8.—On Drafting Hounds for Faults.

The characteristic of the foxhound is "dash." As the harrier can scarcely

be too cautious, so the foxhound can hardly be too fast, *if only his nose is good.* The combination, therefore, of these two points should be encouraged, and all old and slow hounds, however good they once were, must be drafted. Few hounds retain their dash after five or six seasons; and though they can hunt a cold scent then perhaps better than ever, they will dwell too long upon a good one, and will thereby only do harm to the younger hounds. Let not any feeling of favouritism keep these oversteady old hounds in the hunting-pack, but discard them at once whenever their places can be supplied by younger and more vigorous hunters. Inveterate skirters, also, and conceited babblers, by all means hang—they are not worth keeping a day, and deserve no mercy. Hounds should carry a good head, and not follow one another like a flock of geese; and each should seem to struggle for an opening.

It is remarkable how various are the powers of different hounds: some seem to hunt best in covert; some can pick out a cold "pad scent;" whilst others again, though not otherwise faster, can rattle away with a breast-high scent, and beat their rivals at that particular point, though, with the fox in view, they might again be over-matched. But the various classes of hounds seem themselves aware of these variations, and depend upon one another for assistance—Rattler, Rainbow, and Admiral giving way to Jowler, Concord, and Beauty at certain conjunctures, and again appearing to resume their positions by sufferance whenever that conjuncture has passed by. Nothing does so much harm to hounds as leaving them in covert to hunt "riot" unchecked. The second whip ought, therefore, to be careful in getting all away; and he had better be out of the run altogether than leave four or five couple behind him; they learn all sorts of bad tricks, and if some are left every day, almost any pack is speedily ruined. Nothing is more wonderful than the power which hounds have of threading their way through horsemen, and reaching the body of the pack. With a Leicestershire field this is truly marvellous; and when the pace is considered, it will be admitted that it is difficult to account for the way in which tail hounds get forward; but if they do not, they are useless, and they also should be drafted.

Sect. 9.—The Duties of the Men.

The Huntsman.—The general duties of the men have been already alluded to in the preliminary chapter; but I shall now say a few words on those which are peculiar to the hunting of foxhounds. In the first place, the huntsman must be a man in the prime of life, a good and bold horseman, and able to be with his hounds wherever a horse can live. Beckford was of opinion that the huntsman's office is not so important as that of the first whip; and in his day, when hounds were a good deal less interfered with than now, perhaps such was the case. But nowadays a huntsman must be a very superior man; for he must interfere a good deal, or lose his character for "fastness;" and yet, when he interferes, he must really do something or another in a way superior to that which the hounds themselves would have followed. His casts, consequently, must not be general casts, which the hounds themselves would have managed as well as he; but they must be with some particular object in view, and that object ought to be really founded on observation and experience.

Beckford says, "I am very well satisfied if my huntsman be acquainted with his country and his hounds; if he ride well up to them; and if he have some knowledge of the nature of the animal which he is in pursuit of; but so far am I from wishing him to be famous, that I hope he will still continue to think his hounds know best how to hunt a fox." In the present day, however, if a huntsman is not "famous," his hounds will have a poor character, and the sport will not be considered as good as it should be. A huntsman's temper should be good, both for the sake of his hounds and for that of the field; and he should revel with delight in his business, not following it solely for a livelihood, but enjoying it with as much zest as the youngest of his followers. His language to his hounds should be good, and his manner of an animated character, whether encouraging them or repressing their ardour.

The dog-language chiefly used by the huntsman is—"Hark! hark! to Governor!" when Governor speaks, and

is deserving attention; or, when encouraging all to draw, he cries, "Yooicks! yooicks! there, have at him! Rout him out! Push him up! At him again, boys!" These are his chief words of encouragement. The horn brings hounds to his heel in casting or lifting, or in leaving covert, and is always a signal for the second whip to bring on tail-hounds. The great misfortune is, that the huntsman of a pack of foxhounds requires an old head on young shoulders, which is seldom met with; in fact, Hector and Ulysses in one would not be a more improbable combination than that desirable in the model huntsman.

I can conceive no situation more trying than that of a huntsman when things *will* go wrong; a bad scent, a short-running fox, an impatient field, and an easy-tempered master, are enough to try a Job in pigskin. Some excuse, therefore, should be made for such trying circumstances; but when ill success lasts all through a season, or perhaps two, no man should be astonished at grumblings on the part of the attendant "field." Success will generally in the long run be commanded if it is deserved; and if a man has a good head, a good seat, a good eye, and, above all, a fox-hunter's heart, he will generally both deserve and command success.

"Scrutator," in his interesting letters upon hunting and hounds, appears to lean to the system of non-interference, and thinks, with many others, that the modern system of lifting over fallows, and all kinds of halloos, is a bad one. This opinion, coming from a gentleman-huntsman, is a very valuable one, because these are generally the men who delight most in exercising their own talents in preference to those of their hounds. But, after all, it is a question of taste, and it is not to be decided by the number of foxes killed in each way—which is not a decisive test—but rather by the general opinion as to which way is most consonant with the preconceived idea of sport. If the number of kills is to be received as decisive in all cases, shooting birds sitting, or shooting into "the ruck" of a covey, ought to be praised; but the reverse being the case, is an example of the rule not applying in all cases.

While, therefore, the present fashion lasts, the huntsman must interfere whenever he thinks (*and is right in thinking*) that he can do so with a prospect of advantage—not waiting till the hounds cannot hunt, but always lifting or casting when he is satisfied that his doing so will gain time in pursuing his fox. Such I believe to be the modern rule, and if so, it requires, as I before remarked, a better head than does the office of first whip, although his duties are by no means light and easy. In remarking on the duties of the huntsman of a pack of foxhounds, I have passed over his kennel-duties, and those which refer to entering his young hounds, because they are pretty much the same with all hounds and huntsmen, and have already been sufficiently insisted upon in the preliminary chapter on Hunting.

The following twelve rules may be useful to the young huntsman:—

Rule 1.—Avoid extremes in interfering with hounds; for though too much assistance will destroy their hunting powers and make them slack, too little will make them tie on the scent, and hunt *heel*.

Rule 2.—Always cast on the most likely ground first—taking a hedge, for instance, in preference to the open field, and casting rapidly or slowly in proportion to the goodness of the scent.

Rule 3.—Be careful not to mislead hounds; let them always know what is the precise nature of the work to be done.

Rule 4.—Always make good the cast in each direction before trying another, and do not have to go over the same ground twice. In returning from a bad cast over soiled ground, trot as quickly as possible, as the hounds then are not to suppose themselves doing anything.

Rule 5.—When it is *probable* that the fox is headed back, if a forward cast is first decided on, let it be a very short and quick one, and do not lose more time than necessary in that direction.

Rule 6.—When hounds are running in covert, if the fox is seen *in* a ride, and not *over* it, no attempt should be made to interfere with the hounds, as they must hunt very carefully to avoid over-running the scent.

Rule 7.—Although the horsemen are better in the covert than out, yet they should not be riding all over the wood, or they will foil the scent.

Rule 8.—When a fox is hunted up to a farm-yard or village, great care should be taken not to leave him behind. The hounds are very apt to overrun the scent for half a mile or more, when there is the hallooing of the farmer and his men, or of the villagers, and the fox may escape by taking refuge in any outhouse.

Rule 9.—The heel-scent is sometimes stronger than the right scent, in consequence of the wind favouring it.

Rule 10.—When a fox runs his foil in covert, the tail-hounds may be lifted and thrown in at head (Beckford).

Rule 11.—When hounds are seen to be perfectly unable or unwilling to cast themselves, and are apparently bewildered, the chances are that the fox is headed back.

Rule 12.—If many foxes are afoot, it is better to let the hounds divide and hunt all of them at once, as by these means all are equally distressed, and one is sure to break, when the remaining hounds may soon be got up to the hunted fox by the efforts of the whips.

The First Whipper-in is truly a Jack-of-all-trades; he is expected to rate hounds, and stop them from riot on all occasions, as well as the second whip; yet, in case of the huntsman's absence from the field, from any cause, he must be able to hunt them as well as he does. Now, everyone knows that half of the power of the huntsman over his hounds is vested in their personal attachment to him, and that, *cæteris paribus*, the man who best succeeds in making his hounds fond of him, in the summer and in kennel, will do most with them in the hunting field. Yet the first whip, who is always to be rating and using his whip, is at once to step into the huntsman's shoes, and show sport as well as if every hound was accustomed to fly to him, instead of from him. Next, the first whip must be able to foretell the exact point of the fox in breaking covert, and ought to be there to see him; or, if in a larger covert, he ought to be *wherever he is wanted*, which is rather a large space to cover. Then, if the fox unexpectedly takes a line which leads to open earths, the first whip must get there before him, let the pace be what it may, or the maledictions on his head will be many and loud. Such are his greatest difficulties, often so great as to be insuperable; but the regular duties he may fulfil in a satisfactory manner, and they are chiefly the following: and even in these he may easily exhibit extraordinary talent.

He must, of course, be a good horseman, and should be a tolerably light weight; the more under 11 stone the better, and never over that weight. In stopping hounds, never let the whip begin to rate them before heading them, but gallop well before them, and *then* begin to smack his whip and rate them. This is particularly necessary when in the open, but it should also be attended to in covert. While the hounds are running many slight offences may be passed over; which, however, should be treasured up, and considered in aggravation of punishment on the next similar offence. When not running no offence should be passed over, and if the rate and whip are not attended to, the hound should be taken up and well flogged. When hounds are very riotous, it has been the custom to introduce the subject of their riot to the kennel, and flog them well in its presence, rating them the while; but this is certainly a bad plan, and quite unnecessary, if due care is taken in the summer to accustom hounds to riot, two or three couple at a time. When these means have been taken in the summer, and the whip sufficiently used then, the rate "Ware-hare," or "Have a care," or "Ware-sheep," will generally nip such offences in the bud; and that is the time when they are the most easily prevented. Besides these rates, the first whip should chiefly use the halloo on viewing the fox, and should be able to give it artistically; thus,—"Taally ho! taaally ho!! taaally ho!!! Go-n-e away! go-n-e away!! go-o-n-e aw-a-y!!!" followed by the peculiar scream which no words will convey. If, however, the fox is headed back, he alters his note to "Tally ho! back! Tally ho! back!!" and, with a smack of his whip, sends the hounds into covert again as fast as they appear. In assisting the huntsman to get hounds out, not by the whip, he uses the words, "Elup! eluppe!! eluppe!!!"

One thing a first whip should especially guard against, and that is, giving the huntsman any cause for jealousy. This feeling is always sufficiently near the surface, and if encouraged, adieu to all hopes of co-operation on the part of two men whose duties are as much

connected as is the right hand with the left. If, however, the huntsman fancies that the whipper-in is trying to show off at his expense, or to supplant him in the estimation of the Hunt, he is sure to endeavour to lower him, and in so doing he interferes with sport; and the same is the case with the whip. They can do as much harm by opposing one another, as good by co-operation.

Many persons think that a good whipper-in must make a good huntsman, but the two offices are so very distinct that it rarely is the case. The one has a limited field of operations, and has confined himself for many years to that field in which he has been activity itself, and has rivalled "the varmint" himself in skill and daring. The other has a much larger field, and requires to know not only the habits of the fox, but those of the hound as well; also, the natural history of everything upon which his eye falls in the hunting-field —the habits of the crow, whose flight often indicates the line of the fox; the habits of sheep, who often in the distance may be seen to indicate the fox's presence among them; the peculiar style of hunting of each hound, who each often tell him something of what is going on; and lastly, the general features of the part of the country which he is hunting, upon which much depends in his casts and lifts.

THE SECOND WHIP has a much more easy place, as far as head-work is concerned, but his hands will find full occupation, even if he had a dozen pair. He must look out for riot in covert, and stop it quickly and decidedly; he must be ready to bring up the tail-hounds, and on all occasions work to the huntsman whenever he is getting his hounds forward, and lifting them, either in covert or out. "Forrard, forrard," is his everlasting cry, and the acting up to it his chief duty. If he does this well, and takes care to leave no hound behind him, he will fulfil his duties to everybody's satisfaction.

SECT. 10.—POINTS OF DIFFERENCE FROM STAG-HUNTING.

STAG-HUNTING being a sport in which the game is to be saved, hounds must necessarily be easily stopped; they must therefore be very tractable, which to a certain extent is desirable with foxhounds, but still not so much so as with staghounds. Nothing perhaps would be more difficult than to save a fox close before a pack of foxhounds, and many a vixen in the spring pays the penalty of this excessive desire for blood. Without it the dash of the foxhound would be lost, and the chief beauty of the sport marred; it would indeed sink into tameness, and the high price at which it is purchased would be totally thrown away.

SECT. 11.—POINTS OF DIFFERENCE FROM HARE-HUNTING.

HARE-HUNTING, as we shall presently see, is a sport totally different from fox-hunting, and requires different men, different horses, different hounds, and a very different field. Harriers should certainly never be interfered with, and should be able to carry on their hunting under every difficulty. It must be remembered that the hare is always above ground, and that the hounds ought to be able to pick out her scent through every disadvantage; accordingly, time is of no consequence, and the end must always come if only the hounds can continue to hunt. Patience, therefore, may have full play; and the huntsman has little to do but to watch his beauties, and admire their wonderful efforts to out-manœuvre the turns and doubles of the hare. As Beckford observes, fox-hunting without its spirit would be no longer fox-hunting; it would be as stale small-beer to champagne. The harrier or beagle is always at work, but is content to do that work "slowly and surely;" he should never be hurried; while the foxhound's dash leads him to try forward and get on as rapidly as his nose will allow him to do. With a strong bold fox this quality is very necessary, and no true harriers or beagles would reach him; but with a short-running and bad one, the case is different; and then the latter hound would perhaps succeed better than the high-bred foxhound. But when foxes take a straight line, hounds must race as well as hunt; and it is their great peculiarity that they are capable of doing this. Beckford distinguishes hunting the fox from fox-hunting, and, to illustrate his position, shows that a hackney, though he runs a race, is not therefore a race-horse. The foxhound therefore ought to be kept to his own game, and not to be used for

the hare, whose style of running he is not suited for. If hares are to be raced into, greyhounds are the appointed dogs; and it is a poor kind of coursing when the hounds occasionally stoop to the scent, and at other times run their hare in view. Fox-hunting in its very essence implies courage, impetuosity, pace and dash, in all engaged; whilst hare-hunting is inseparably connected with cool, cautious, old-gentlemanly discretion and wile. Towards the end of a run the difference is very remarkable. The foxhound *vires acquirit eundo*, is more and more full of dash, and, as he catches view, is literally frantic with excitement; but throughout the hare-hunt the same steady and beautiful but calm kind of hunting goes on; and even at the kill the hounds seem scarcely to enjoy their bloodless victory. Beagles cannot possibly be too tender-nosed, provided they are all alike and pack well; but the foxhound may easily be so, if he is thereby tempted to tie on a scent and potter, whereby time is lost and the fox escapes to his earth.

FOX-HUNTING IS THE SPORT OF YOUTH AND EARLY MANHOOD, and is rarely enjoyed to the fullest extent beyond that period of life. Few men after forty-five can get up the steam sufficiently to enter into it with all the zest which it is capable of inspiring; and though many who have passed their grand climacteric join in its pleasures, it is generally without also partaking of its perils. A perfect hunter and a little riding to points will generally suffice for the prevention of accidents, but the sport is not then enjoyed as it was at thirty; nor is it really partaken of in all its glories and perfections. How seldom do we see any man above the age I have specified at all near the hounds! Certainly there are some brilliant exceptions, and especially with some of our most prominent huntsmen, whose grey hairs seem no impediment to daring horsemanship, and proper and efficient assistance to hounds.

I have heard that there are some men who prefer a tough beef-steak to one cut from a tender London rump, because the former lasted longer than the latter; and with them perhaps a four or five hours' fox-chase is the perfection of the sport; but though I like to see hounds left to themselves a good deal, I confess it is only that they may get on the faster, not dwell the longer on a scent. All hounds go fast enough with a good scent, but no hound can go the pace which a foxhound can with a bad one; and in this is another point of difference between the two hounds. It must be remembered that during every minute lost the fox is nearing his point of safety by some hundreds of yards: whilst in the case of the hare she is only crouching close to you in all probability. For all these reasons foxhounds should always be above their work, in order to retain that dash which is so highly prized; while harriers can scarcely be too much worked, as thereby they are rendered sufficiently steady and ready to stoop.

SECT. 12.—BAG-FOXES.

Whenever bag-foxes are to be used they should be hunted solely for the purpose of giving blood; and if it is intended to depend upon them entirely, a pack of harriers will serve the purpose much better than foxhounds. They run much more like hares than wild foxes, and, not knowing where to look for earth, they do not take a line; and consequently are soon run into by foxhounds which will condescend to hunt them. Old hounds which have tasted good, sweet, and healthy wild foxes, will scorn such carrion; and the fact of a bag-fox being shaken out before hounds by the keeper is often clearly indicated by the best hounds refusing to take their usual leading places at the head of the pack. Harriers, however, will hunt bagmen with great alacrity; and the sport is very similar to a run with the hare; and, as displaying all the excellences of the beagle, is not to be despised. I should much prefer such a sport with a good pack of full-sized beagles, to the slow sport which is afforded by bad foxhounds in a bad country, where foxes are perpetually lost, or changed, or chopped, and where a good run is a rare exception.

SECT. 13.—CONSEQUENCES OF A SEVERE RUN.

When hounds have had a very severe run they require some time to recruit; and the same pack should not be again taken out for three, four, or five days, if it is possible to avoid it. In all cases, the hardest working hounds

suffer the most, and they must have rest, while those which have husbanded their powers must make up the pack with the hounds which were left at home on the occasion of the hard day. When hounds have been very severely tested, they often take a week to come round, and should have it at all costs, as these are the treasures of the pack, and if they are overworked will sadly injure its brilliancy. Hardworked hounds should have a little extra flesh; but this will not entirely do away with the necessity for rest, and, if carried to extremes, will only make them mangy and full of humours.

Lame hounds, likewise, ought to have full time to recover from their injuries, and should never leave the kennel till quite recovered; it is a stupid and cruel plan to take out lame hounds in order to make up the numbers. They must lag behind, and only occupy the time of the second whip, in getting them taken care of at some keeper's house or labourer's cottage. It is far better to start with short numbers of useful hounds, than to cheat the eyes of the uninitiated, by taking out a lot of cripples to the meet—a practice which every sportsman soon condemns in the hearing of the whole field.

Sect. 14.—Necessity for Blood.

It is commonly, and indeed almost invariably, said that foxhounds must have blood; and since the time of Beckford the saying is constantly paraded. But though some blood is necessary, yet it by no means follows that it is well for the hounds to kill every fox they find. Even were it possible, it would not, I think, increase their dash, or add to their hunting; for an occasional disappointment is more likely to give zest to success than if the constant termination by a kill was the goal to which all hounds look forward without a doubt or fear. Observe how differently an old greyhound runs when he thinks there is a chance of losing his hare; he then puts on the steam, and is a different animal from what he was when he thought ultimate success as certain as fate. And so with the foxhound: if he finds blood always reward his exertions, he will not try nearly so hard as he would do if he were doubtful of success. Hence, how often we see, after a week's bad scent, a good pack go off with a fair scent, and run as they never ran before. Such dash! such a head! as never was seen. They have been disappointed day after day, and are savage *for want of blood.* But this must not be carried too far; if they are hopeless of success, they will become slack; and in time this is always the result of bad management. Hounds soon learn to know if they are well hunted; and like race-horses they do not half answer to bad handling.

CHAPTER VI.

HARE-HUNTING.

Sect. 1.—Hare-Hounds—and how to procure them.

The varieties of hounds for hunting the hare have been already mentioned at page 143, under the heads of Harriers, Medium-Beagles, Dwarf-Beagles, Fox-Beagles, and Terrier-Beagles. I shall therefore now proceed to describe, as in fox-hunting, the best mode of obtaining a pack. It will be evident that here time is no object, for a man may spend half a dozen years in procuring a pack if he likes; and I am inclined to think he would succeed the best by so doing. A pack of hounds to the exact taste of the intended sportsman is seldom in the market, and the first thing a purchaser does is to set to work to get rid of certain peculiarities inherent in his bargain. Thus, they are too high or too low, or too fast or too slow, or too flashy or too low hunters; or some other fault will be found which destroys his pleasure in hunting them. There is such a vast difference between the two extremes, and so many shades to be met with, that few men can easily please themselves with any but bantlings of their own breeding.

Besides, a man can easily breed six or eight couple of hounds in one season, and these with a few old and steady hounds will serve very well for him to begin with. He will also, if he hunts them himself, be better able to manage a small pack, and may teach himself and them at the same time. I should therefore advise intended masters of harehounds, unless they meet with a pack *exactly* to their minds, to set to work and breed, rather than to buy an indifferent pack. Three or four bitches should be selected of the exact size, blood, and symmetry which are desired, and any price given for them. Let no moderate sum be considered too high to procure this nucleus of the future "little terribles;" for upon them all depends, since, whatever they are, such will be your young hounds, subject always to the change produced by the cross with the intended sire. Now, it will be seen at page 144, that I have recommended the beagle blood to be selected in preference to the foxhound for hare-hunting, because in them are developed to the highest extent the hunting powers of the old tender-nosed hound, with sufficient pace only to allow the hare to exhibit all those wiles which serve to display the hunting of

PACK OF FOX BEAGLES.

the hound. Unlike the fox, the hare cannot save herself but by her doubles; and the beagle has full time to follow her in all her mazes and wanderings. The hare-hunting foxhound, on the contrary, presses her too much, prevents her running in her natural style, and races into her in a most bastard and unnatural manner, comprehending the bad features of both kinds of hunting without their good ones. By all means, therefore, I should steer clear of that cross, except in a very remote degree, or in very small hounds which bear the foxhound cross without injury, because, with all their dash, they cannot press the hare sufficiently to prevent her display of doublings.

If the purpose, however, is to get together a pack of average-sized harriers, say of about eighteen to twenty inches, the less foxhound blood they have the better. Of course it may be easy to err in the opposite extreme, and to get hounds which will sit down on their seats of honour (if they have any), and throw their tongues in the most melodious manner without stirring their legs. Such animals are absurdly slow, and will please no one, I should imagine; nor, indeed, would they be easy to procure in the present fast age. But

plenty of tender-nosed harriers can be procured, with more or less foxhound blood in them; and the brood-bitches should be selected according to taste from these hounds. These bitches will also serve to enter the young pack, for, as the dash and speed of the foxhound are not wanted in hare-hunting, their age and caution will be exceedingly useful in picking out the scent when the young hounds are in difficulties.

The full-sized and naturally fast modern harrier is particularly adapted for running trapped hares, when a gallop of twenty minutes is all that is desired, or that can be expected. These hares run as straight as a fox, and in very much the same style, often topping the low fences like a dog, if hard pressed. They do not try the hunting powers of the hound, because, in the first place, their scent is strong; and, in the second, the ignorance of the country they are in seems to prevent all attempt at safety by artifice, and they run straight till picked up by their followers. Small and comparatively slow hounds are here out of place, displaying neither the pace which may be obtained with the trapped hare, nor the beautiful hunting met with in the wild one. The small drafted foxhound is very little different from those modern harriers, but, not having been so long confined to hunting the hare, is not so well suited to the hare-hunter's purpose; and I should prefer breeding from sires and dams which are true foxhounds in blood, though long used to hunt hares. These modern harehounds are very fast, and burst their hares generally within half an hour; they have also excellent noses; but they are too fast, in my humble opinion, for the sport of hare-hunting. Occasionally a quick hare, or one of the down hares, may stand before them for miles, and show as straight running as a fox often displays; but if such is desired, why not hunt the fox at once, in which you will get such runs constantly, and not as exceptional cases? If harriers are to be used as a means of giving a gallop, trapped hares turned up on downs are the best, and for them these dwarf foxhounds are fully adapted; but if for showing true and close hunting, without reference to pace, we must go further back towards the old southern hound to procure a hound suited for the purpose. Nevertheless, as all may not think alike, it is well that every one should know how to procure that which will produce exactly what he wants. This I have endeavoured to show, and also to point out how the pack may be bred exactly to suit the taste of the master; but if that plan is considered too slow and long of accomplishment, two or three packs are generally sold every season, at a price varying from 60 or 80 guineas to 300 guineas; the latter being a very high price for harriers, though 700*l.* is said to have been once given for a celebrated pack. From these one may be selected, and if it does not answer the purpose, it is no fault of mine.

Sect. 2.—Breeding.

When the choice is made of a particular kind of hound, it is necessary in the pack of harriers, far more than in foxhounds, that all should be bred to that standard. This is not only desirable on account of looks, but also on the score of efficiency; for, if hounds are not of the same size and form, they are much less likely to pack well than if all are cast in the same mould. Let the bitches, therefore, be all as much as possible alike and of the same blood; though, for after-convenience of breeding, not too nearly related. Then put them all to the same dog, or to similar ones, for if they are put to dogs of various sizes and blood, the progeny will vary also in externals as well as in style of hunting. It is well known that breeding in-and-in will not do if carried too far, but with harriers it may be carried to a great extent, and thrice in to once out will keep up in a pack a sufficient amount of strength of constitution. Supposing, therefore, two couple of bitches have been bred from, they will, in all probability, throw from twelve to fifteen couple of whelps; and with a little aid from other bitches (for which purpose many may generally be obtained at the right time), that number may be reared. These must be sent out to walk at two or three months old, and, with good luck, ten couple of young hounds will come in towards the beginning of January, and may be at once subjected to kennel-discipline, and in a month's time may be entered to hare; which, however, they should never run for

more than an hour or so in the day during their puppyhood. These hounds, however, may be entered much earlier than foxhounds, but the larger dog-puppies should be kept until the autumn.

The management in kennel is the same as described under the first chapter on Hunting, and the breaking from riot also; remembering that for them hare is not riot, but the contrary. Much time is gained, and great advantage in every way results, from entering harriers to their game at this early age; and I am sure that the development of the taste for the sport is in a ratio with its early instilment; besides, as these hounds have not the courage of the foxhound, so they are less calculated to bear any loss of this quality; and yet, during the next summer, they must be constantly exercised, with the whip and rate perpetually going, though the less these are used the better. But if they have been entered, their natural propensity to hunt has been encouraged, and they will afterwards bear some degree of rating pending the summer.

During this first entering, and the following season, it will not be possible to be very strict in drafting hounds, because there is little choice, and the master must make up his mind to rub through this time with what he has, looking forward with pleasure to the future as the time of perfection. By again breeding the same number of whelps, at the end of the first season he may begin to draft, as he finds there is a probability of supplying their places with more efficient and elegant substitutes; and by the beginning of the second season he may take the field with a good-looking pack of perhaps eighteen or twenty couple of hounds, which, if not quite up to all the dodges of the hare, are at all events soon likely to be—that is, if properly managed, and not too much interfered with. This plan will produce a pack in two or three years, at only a few pounds' expense, for walking and keep of hounds, over and above the original price of the brood-bitches. It will also afford the master the pleasure of feeling that he has bred his pack to his own model of perfection; and if he has not fully succeeded, he will be sure to console himself by the belief that he has approached it as nearly as possible. We are all prone to hug ourselves in this way, and a great happiness it is to most that human nature is so constituted. Every man's goose is a swan in his own eyes, however manifest its anserine properties are to all the rest of the world.

Sect. 3.—Peculiarities proper to the Men.

The Huntsman—who is also with harehounds generally the master—should be a very different person from the huntsman of a pack of foxhounds. Sometimes a young man succeeds in this task; but more frequently he fails, from want of temper and patience; and the age which is best suited for the sport is that at which man usually has arrived at some degree of control over his natural impulses. Still there are some exceptions to this rule, and I have seen harriers exceedingly well hunted by very young men. But, whatever the age of the huntsman, he should be quiet, persevering, cautious, and free from meddling, and should trust to the noses of his hounds in preference to his own head. Beckford recommends that the huntsman of a pack of harriers should be bred from a female of the family of the "quiet gentleman" in the *Spectator*, crossed with a knowing huntsman, and probably this cross would suit; but, as with the poet so with the huntsman, *nascitur non fit.* He must be taken as he is framed by the Almighty; and few are so framed as to fit them for the management of harriers till they have sown a crop of wild oats in other and more exciting amusements. The chief art of the huntsman here is in breeding his hounds, and in drafting them, so that they shall be "suity," and pack well; for when once they are in the field, little or no interference is necessary. They should be as handy as kittens, and should scarcely require a whipper-in; and indeed, some of the best packs I have ever seen have been without that appendage. By constantly taking out hounds in summer, and breaking them from riot, and by feeding them after drawing each by name, and otherwise getting control over the hounds in the summer season, it is seldom that any occasion occurs for the office of the whip. If the huntsman rides well to them, he is always near enough to them to interfere when this is wanted; and the hounds are not cowed by the needless display of power,

which, if placed in the hands of a whip, is sure to be exercised. But the critical eye of the master is always employed, though he may otherwise be idle, in watching the actions of each hound, and noting his hunting and his pace, also in detecting skirting and babbling, and in deciding upon all the various qualities which will lead him to draft certain hounds, or to breed from others. This is interest sufficient for any man; and to a real lover of hunting it is a most delightful amusement. A comparison may here be drawn between getting a perfect pack of beagles together, and putting four horses in harness so as to exhibit a perfect team. In both cases anyone can manage them when broken; but the artist is shown in getting them all to pull together, and to be exact repetitions the one of the other. In a four-in-hand team, one horse ought not only to be like the others in size, colour, and shape, but his action should be the same, his carriage the same, and he should do exactly his own share of work, and no more. This is the perfection of four-in-hand driving, and a very difficult task to accomplish satisfactorily; and so it is with harriers or beagles—they may easily be handled when well matched, but it is in the matching that the huntsman's power is shown. He therefore requires a great knowledge of individual character in the hounds, so as to select for breeding purposes those only which exhibit what he wants in great perfection, and to cross with those which will develop still further those good qualities or suppress the bad ones.

THE WHIPPER-IN should be a mere groom, solely intended as a second pair of hands to those of the master; and he should never be allowed to use them without orders. With a gentleman hunting his own pack, such an assistant is very desirable for holding gates open, turning hounds, keeping them from tying on the scent, and from riot, &c., all which are tiresome tasks, but may be easily performed by one pair of hands, if the owner of them does not mind the trouble.

SECT. 4.—PREPARATIONS FOR HUNTING.

The pack intended to hunt on the following day should be drafted and fed at about twelve or one o'clock, and then shut up. From twelve to fifteen couple are quite sufficient for hare-hunting; and the hounds ought to be all equally free from lameness, and very level in condition. Beyond this nothing is requisite, as there is no earth-stopping to be attended to, or public notice of the meets; but the privileged few should have their information in good time, which is arranged in different ways, according to the different circumstances of the pack. Sometimes harriers are publicly announced to meet two or three times a week, but the injury done to the crops and fences by the field, if numerous, is so great, that there will always be great objections to this. Hares almost always take a ring, and often the same fields are run over several times; and consequently much greater damage is done than in a straight run, as with fox-hounds. It is only, therefore, where hounds have a great reputation that farmers will allow their land to be thus sacrificed; but in some neighbourhoods the sporting tendency is so strong as to overpower the love of gold, and with them the result is, that a well-behaved field of horsemen is always welcome. There is never any excuse for wantonly riding over turnips, or young wheat, or seeds, with harriers, because the pace and direction are seldom such as to compel the maintenance of a straight line, and a slight detour to avoid such crops will never much interfere with the enjoyment of sport. Some excuse may be made for the field of fox-hunters riding over any crop, let it be what it may, in the ardour of pursuit; but even then some little care should be taken to avoid doing injury to one's neighbours; but in the pursuit of the hare, the man who does such a thing deserves to be well rated by the master, as well as by the sufferer, for his thoughtlessness.

SECT. 5.—HARE-FINDING.

THE FORM OF THE HARE, or, as it is sometimes called, her SEAT, is very easily seen by some men, and with as much difficulty by others. This does not seem to depend upon quickness of sight only, for I have known many who could see long distances, and were very quick-sighted, who never could find a hare in her form. Others, again, of comparatively weak sight and slow

habits, were sure to find her if she was within view; so that it may be considered as a knack or gift, a good deal dependent upon the powers of observation. Much depends upon the observance of colour, for it appears to me that this is the chief guide. I have generally observed that quick hare-finders have corrected a mistaken "See, ho!" by the remark, "No, that is too red for a hare;" or, "That is too green." Never "That is not the right *shape*," but always the difference of colour. It is probable, therefore, that good hare-finders have a very delicate perception of shades of colour, and by that faculty are able to find the hare in her seat.

Hares sit in different situations, according to the nature of the weather, and should be looked for accordingly. Thus, in windy weather they get out of its way, and sit on hill-sides under the lee of the wind, or under the protection of a hedgerow, and not far from it. In dry weather they affect damp and marshy grass bottoms, and in wet weather will only be found on high and sandy banks. They seldom sit on their feeding-ground, though this rule is not an invariable one. Fallows are a very favourite and chosen seat for hares; and when there they generally choose their forms near the top of the ridge. Fallows newly ploughed are never used by the hare for much less than a fortnight, and very stale ones are also rejected. It is difficult to account for this last rejection, because we cannot understand why a stale fallow should be disliked by the hare; but so it is, and the fact is well known to the hare-finder. Some fields also are much liked, year after year, by hares, and others as much rejected; but here again no one can assign a reason, since their food has nothing to do with the choice, and we know nothing of their other *penchants*. In hare-hunting, it is very desirable to find the hare sitting, because she may otherwise sit so close as to be "chopped" before she gets away, a consummation to be carefully avoided; and at the present usual hour of meeting, the trail up to the form can seldom be hit off, in consequence of the hare having too long been in form to have left any scent on her road to it; though in this way hares are much more easily found than foxes, the scent of whose drag is much more faint than that given out by the trail of the hare. The hare-finder therefore, if possible, finds the hare for the master, who brings up his hounds to within a reasonable distance, and then the hare is put up out of view; immediately after this the hounds are laid on the scent, and the run begins. If this cannot be managed, and no hare is found by man, the hounds proceed to draw for puss on the most likely ground; and as the hour of meeting is, as I before remarked, generally too late for the trail, they spread themselves over the land, in the hope of finding her in her form. The objection to this is that the hare always gets up in view, and is frequently chopped; but if she escapes this early death, the view makes the hounds flashy and unsteady, and prevents them settling down to the scent as they would have done if not excited by the view. Much, however, depends upon the hounds and upon the hares, also upon the kind of hunting preferred; for if the foxhound style is preferred, this flashy kind of hunting will not be rejected. If a hedge is to be beaten, a man or two should advance a few yards before the leading hounds and beat it well, or otherwise the hare in jumping out is sure to be chopped.

The drawing of the hounds is in any case a very beautiful sight, and the careful trying and even spreading of the little symmetrical animals is one of the prettiest parts of the sport. Hounds, when thus accustomed to find their hares, take a great delight in looking for them, and go on from tussock to tussock, and from one likely spot to another, in the most lively yet knowing way—reminding one of the peering ways of the magpie by their sharp and quick, yet quiet style of trying every likely spot. This part of hare-hunting has always appeared to me the one in which it may assume a superiority over fox-hunting; for here the eye finds an opportunity of dwelling with admiration in the minutes of expectation, whilst in drawing for a fox it is but seldom that the expectant and impatient fox-hunter can find any amusement or occupation, except in his cigar or the gossip of the covert-side. Next in beauty to the working of a brace of pointers or setters I should place the drawing of a pack of "suity" beagles or harriers; it is, to my taste, not far behind that beautiful picture,

though the find certainly does not come up to the "set and back" of the shooter's grand assistants.

Sect. 6.—The Run.

The artifices of the hare are truly wonderful, and beat those of Mr. Wily hollow. Why the fox should have obtained this name in preference to the hare is very unaccountable; for every man conversant with hunting is aware that the hare is ten times more cunning than the fox in her doubles and running devices. If she is watched before the hounds, she will be seen to go straight away while in view, and then to commence a series of doubles, which certainly must require a degree of reasoning power for their development. She returns on her track, perhaps, then makes three or four enormous jumps, and starts off again at a right angle with her former course; she will then, if in a wall-country, jump on to the top of a wall, and run some yards along the top; then, descending with a long jump, she will perhaps squat till she ascertains the success of her manœuvres. After this, if unsuccessful, she will try others, such as running through sheep, or through a covert and back again, coming out at the same meuse and running up the ditch, and off again on a fresh circle. Often she will pass by a furze or thorn bush, at the distance of a couple of yards; then, returning, she will carefully follow her former course, and from it throw herself into the bush, where she calmly remains while the hounds hunt by her. Again, she will perhaps take water, and endeavour to foil the hounds in that way, often swimming a tolerably wide river in effecting her purpose, and generally, without perhaps intending it, being carried down the stream, while the hounds are sure to cross straight over, or as nearly so as possible. Such are a few of her artifices, and the hounds should be able, and also be permitted, to follow out all these various devices without assistance; the huntsman knowing that time will always bring her to bag, if they can only hold on with any scent at all. Hunting is here the perfection of the sport, and no one should care for the gallop. Plenty of fencing may be had, if it is desired, or the hare-hunter may otherwise avoid it in most cases, by availing himself of gates and gaps. If, however, a huntsman is to be in his proper place, he must take all before him just as with foxhounds; though this is not necessary for the present day's sport, but rather for that of the future; for unless he sees all the working of the hounds, he cannot possibly distinguish the good from the bad, for the purpose of drafting or breeding. Harehounds seldom or never require a cheer; they are only too apt to overrun the scent without it; and, *as a pack*, they should be left to their own devices on all occasions but the following: first, when they come to a check, and cannot recover the scent; secondly, when they change hares; and thirdly, when they divide. Individual faults must of course be rated by the huntsman himself, or, through him, by the whip.

The Check is the greatest criterion of the harehound's powers, for while the good pack spreads and tries every yard of ground with the greatest care, persevering even beyond all apparent hope of success, the bad one soon gives up, and the hounds stand idly and listlessly about, expecting the hare to jump into their mouths. In hare-hunting the check generally arises either from the stain of sheep, or from the hare having practised some unusually clever double, or from her passing through a covert stained with the scent of rabbits or other hares. When the check is in the open, and from sheep, the hounds having tried their cast and failed, the huntsman should try round the whole field, taking the hedge carefully, and not allowing the hounds to follow at his horse's heels, but encouraging them to try all the way. If the scent cannot be hit off, and the hounds are good, the probability is that the hare has squatted in the middle of the field, which she often does; and if there is any covert, as in turnips for instance, every yard of it should be tried. During this second cast in the field, it often happens, if a good look-out is not kept, that the hare steals away without being seen, and in that case may be missed; though if the ground is carefully beaten she will be sure to be hit off by some of the hounds. If, nevertheless, no hound can scent her, the huntsman must extend his cast and

try the hedgerows next beyond, taking them in the order of their probability; and remembering that hares have always a tendency, *unless they have a decided home*, to return to the place where they were found. If, however, they have a home, he should try forward towards that home; and in that direction will generally succeed in recovering the scent. Most hares nowadays are bred in covert, and return to it whenever disturbed; and these will generally be easily recovered by a cast in the direction of their home. Where the check arises from a double, the huntsman should have previously observed the nature of the doubles which have already been followed out, because these will afford some clue to the one now interfering with the sport—for this reason, that the same hare generally adopts the same *kind* of double throughout her run. Thus, if she has been returning on her line, and then taking a jump and on again, she will most probably repeat this over and over again, but under different circumstances—as, in or near a hedge, or in or near a brook, &c.; and the huntsman must expect these variations of the same artifice. Again, if she has been making a small ring and hunting the hounds once, she will be sure to try it again; and when most at fault, the hounds may just have passed over her in her secure retreat, where her scent is completely overpowered by that of the hounds.

In Case of the Change of Hare, the hounds should be stopped from the fresh hare, and the old scent recovered if possible. Nothing disturbs hare-hunting so much as the over-abundance of hares; and where they are thickly preserved it is quite out of the question to attempt this kind of sport. In many preserves a change would occur every five minutes, from a fresh hare jumping up before the hounds; and, therefore, the sport is totally unfitted for such countries. The hunted hare may almost always be known by her changed colour and wet and dirty appearance, while the fresh one is clean and dry. Hares long hunted become very dark indeed, and almost of a dark slate colour.

When Hounds Divide, the huntsman, if both hares are fresh, may choose which he shall follow, and send his whip to stop the hounds from the other, and bring them up to him. If one is the hunted hare and the other a fresh one, no one will hesitate a moment in selecting the former, and stopping the hounds from the latter.

Sect. 7.—The Kill.

The Kill is generally, with harriers, the most painful part of the whole business, because, in the first place, the cries of the hare are often piercing and piteous in the extreme, resembling those of a child in agony; and the hounds not being always allowed to have her, the whip is obliged to be used at a time when they least deserve it. It is true that some packs are so highly broken that they will not even tear the skin of the hare; but few have arrived at such a pitch of perfection without losing their hunting powers; and it is not, I think, to be attempted by the amateur master. Ordinary hounds will occasionally gratify their desire for blood, and should be indulged with a hare once a week at the least; indeed, many huntsmen like their hounds to have the last hare they kill on each day; but this is perhaps more than necessary. If the huntsman is a good horseman, and is well up with his hounds, he may generally pick the hare up without using the whip, as the hounds will not break her while he is so close; but if at a distance at the time, they will take advantage of his absence, and when once the blood is tasted, the whip must be used to stop them in time. No one but the huntsman should attempt to pick up the hare without the whip, as the hounds will only tear her from his hands. I confess that I should at all times be unwilling to interfere, as I would much rather see the hounds enjoy their dainty morsel than see it reserved for the stomachs of less deserving bipeds, who have not earned even the currant-jelly with which it is served up.

Sect. 8.—The Expenses of Harriers.

Compared with fox-hunting, the expenses of hare-hunting are very trifling, and it must be also recollected that the first outlay is much less. The annual expenses of a harrier pack may be calculated as follows:—

	£	s.	£	s.
24 couples of hounds at 1s. 6d. per week per head	187	4		
Tax on ditto	12	0		
Medicines, &c. . . .	4	0		
3 horses for 7 months, at 15s. per week . .	67	5		
Ditto 5 months, at 7s. .	23	2		
Veterinary surgeon . .	5	5		
Shoeing	7	10		
Saddlery	12	0		
			318	6
Brought forward . . .			318	6
Helper and whip, at 12s. per week each .	62	8		
Tax on ditto	1	10		
			63	18
			£382	4

By great economy, and the dispensing with the whip, and using one horse only, with twenty couples of hounds, only about half this sum will suffice, especially with beagles.

CHAPTER VII.

OTTER-HUNTING.

Sect. 1.—The Otter, and its Haunts. At page 13, the otter has been already partially described, but for hunting purposes his habits and peculiarities must be more carefully studied. He is an amphibious animal, living entirely upon fish, and seizing them by swimming under them, and thus taking them when they least expect it. His scent is very strong, so that hounds can hunt it for some hours even after the otter has passed. He is very tenacious of life, and a very hard biter, and will easily break the leg of a dog if he gets good hold. The otter does not confine himself to the water, but travels up the side of the river or brook for some distance, and leaves his foot-mark, called his *seal*, which may be easily recognised by the round ball or cup-like depression, and the marks of the webs, which are visible in the well-marked *seal*. The hounds can therefore generally hunt the otter up the banks of the brooks which he frequents; but the *seal* will afford the best signs for tracking him to his burrow, the entrance to which is like the water-rat's, always under the water, while a small and invisible hole supplies it with air. This burrow is called his *couch* or *holt;* and his coming to the surface to breathe, which he is obliged to do every few minutes, is called his *vent;* his dung is also called his *spraints*.

The great drawback to this sport is the scarcity of the otter in any given spot, so that to obtain sport a large district must be ransacked, and the hounds taken long distances, often to seductive promises of sport which are without real foundation. Nothing is more disheartening than to find, after travelling twenty or thirty miles to a river where otters are promised to be shown, that no *seal* is visible along the whole course of the banks. This mark is always to be met with, either fresh or stale, and the experienced otter-hunter knows that if it is entirely absent he has been deceived by false representations.

Sect. 2.—Otter-Hunting Implements.

Otter-spears are the only requisites for this sport; and they are objected to by many otter-hunters, as unnecessarily cruel. There is no doubt, however, that they are of great assistance, not only in killing the otter, but in enabling sportsmen to leap over brooks, &c. They consist of two portions, the pole and the head. The pole is an ashen staff about twelve feet long, strong in proportion to the strength of the party using it, but stout enough to bear his weight as a leaping-pole. It should have an iron head, either fixed on or screwed into a socket fixed on the pole; but the permanent head answers all the purposes required, and is very much cheaper. It can also be made by the village blacksmith, and, if lost in the ardour of the chase, may be easily and cheaply replaced. If the head is made to screw on and off, it is usual to have a concealed barb, which comes out of a mortice on the animal being transfixed, and thus

holds him firmly fixed on the spear; but the slightly-barbed spear-head is quite sufficient to secure him firmly if fairly through him, and even the concealed barb will not do this unless it also pierces the body of the animal. Where the spear is used, each sportsman should have one, and a spare one or two may be carried by an attendant, in case of accident.

Sect. 3.—Otter-Hounds.

The otter-hound has been also partially described as a descendant of the old southern hound crossed with the wire-haired Scotch terrier, and probably with the water-spaniel. He is the nearest approach of all to the southern hound, and has the length of ear, the full pendent lip, the dewlap, and throaty frill, which are so characteristic of that hound. His nose is very good, which is required to track the cold scent of the otter, and to follow him in the water, where the otter-hound often speaks to the scent in a wonderful manner. The pure foxhound was used by Mr. Grantley Berkeley for the otter thirty years ago, and since then by Mr. Trelawny. He will hunt the otter no doubt, as indeed he will hunt whatever he is entered to, but he is quite out of place here, being too fast on land, and not a sufficiently good swimmer in the water, nor capable of bearing that element for so long a period as the otter-hound, whose greasy and woolly coat is impenetrable to wet. The deep-toned note of the otter-hound is another remnant of the old southerner, and he may often be seen to throw his tongue on the scent without the power of moving his legs, so great is his pleasure and excitement. This, however, is too much of the old school, and should be got rid of in the perfect hound, and generally is in the present day, by crossing with the foxhound. Otter-hounds are very savage animals, and will fight to the death, which is a common result of their quarrels. If not savage, they will scarcely cope with the otter without flinching, as his bites are exceedingly severe. The otter-hound may be obtained without much difficulty in Wales, Devonshire, the north of England, or Scotland, where packs of them are still kept up, and hunted wherever the otter is heard of.

Otter-hounds are generally bred about twenty-four inches in height, the bitches being less, as usual with hounds. There is a smooth otter-hound, but the rough one is that generally in use.

Sect. 4.—The Men.

A huntsman is required for this sport, as for all others where a pack of hounds is engaged, for no pack can be properly managed except by a man who is always in the habit of taking them under his control. Unless, therefore, the master of the hounds undertakes the task himself, he had much better entrust the entire management to this man; because they will seldom work so savagely and courageously for any one else as they will do for their regular feeder and attendant. Otter-hounds are of no use unless they try most perseveringly every inch of the bank; and they must stand the water, or at least continue to be wet for hours together. This, even in the summer season, is a very cold business in the early mornings; and they soon begin to be slack, unless animated by a person to whom they are strongly attached. For this reason, therefore, I should prefer the regular huntsman to any other person. The only other paid servant necessary for this sport is an attendant to carry a spare pole or two.

Sect. 5.—The Hunt.

When an otter has been heard of as having been seen in any neighbouring stream, or when his presence is suspected there from his "spraints" or "seal," or from the half-eaten remnants of the fish which he has caught, the hounds are started off very early on a summer's morning—that is, by dawn of day. No other season but the summer will suit this sport, because the cold water of early spring, winter, or autumn, will chill and cramp hounds and men to a dangerous degree. But while the warmth of summer is necessary to heat the water sufficiently, the rays of the mid-day sun are inimical to the scent; usually, therefore, the hunting is over by nine or ten o'clock. The meet should take place by five at the latest, which will give four or five hours' hunting. When the river is gained, the sportsmen should divide

into two parties, one half taking each bank, and anxiously looking for the "seal" of the otter. The hounds at the same time should try every likely place; and when used to their work they do this most systematically; scenting and trying every inch of ground, and especially those places which, by experience, are likely to contain the "couch." The roots of old trees are extremely likely, and those still pools which are just below a point in the river are the usual places where the otter chooses his "couch." At this hour in the morning the otter has not long retired from his nocturnal foray, and his trail may then generally be hunted even when his seal is not visible from the hardness of the ground or its being covered with grass. There is no reason why otter-hunting should not be commenced as soon as the water is warm enough in some rivers where the meadows are grazed on each side; but where there is mowing-grass it must be postponed till that is cut, because the men and dogs do great injury to that valuable crop. After some search, perhaps a "challenge" is at last given, and one of the most tender-nosed hounds hits off the scent, with a note which informs his master, in the most unmistakable manner, that his game is at hand. Now every sportsman must take his place and perform his allotted task. Some one or two should pass upwards to the next ford, and carefully watch that point; another pair should take the same post at the ford below; while the remainder must watch every intervening yard for his "ventings."

Meanwhile, the hunt proceeds, and the hounds are following the "challenger's" steps, and endeavouring to make out the whereabouts of their game. At last, the scent becomes stronger and stronger, and the couch is reached with a grand chorus of music from the whole pack. At this moment, from the ford above, a halloo is given, and he attempts to pass it, but is turned by the spears of the hunters posted there. The otter, knowing full well that his couch is not secure, generally leaves it before the hounds arrive there; and it is from that cause that he has tried the stream. He next tries the ford below, and here again he is turned: then seeking the pools of the intermediate space, he is obliged to "vent," and is met with the spear of the hunter or the fangs of the hound.

If, now, the hunters appointed to watch the fords will only keep well their ground, his death is almost certain; but too often they are watching the progress of the sport above or below, and, while doing this, neglect their own allotted office, and suffer the otherwise doomed animal to pass their watch. A lull ensues; no vent is seen, no tongue is heard, and disappointment is marked on every face. Every inch of water is tried, and still without success; for the otter has broken through the ford, and is perhaps a mile off at the time when the first pool is finally pronounced untenanted.

The next step is to decide upon his having run up or down stream, which is always a lottery; for when hunted, he will be as likely to run up as down, and *vice versâ*. One or the other, however, must be tried; and the hounds will here soon pronounce whether the selection has been a good one or not. If, therefore, after trying in one direction for a quarter or half a mile, no challenge is heard, by all means try in the opposite direction. As soon as any certain indication is afforded of his having chosen either course, it will be desirable at once to halt, and to send a party of three or four of the best runners down to the next ford, at least half a mile below. Here they should diligently keep a look-out while the hounds hunt up or down to them; and if this pool is blank, then let them run on to the next. When once the otter is again pounded, he must be again hunted as at first, a party being placed to intercept him above and below, and the remainder with the hounds hunting him in the pool. This is the only way to kill an otter with any certainty; for if he is regularly followed, he will assuredly tire out any pack of hounds, since he swims with ten times the ease with which a dog can follow him, in deep or shallow water. But by pounding him at the fords, and confining him within given bounds, he tires himself in his efforts to swim from one to the other, and to avoid the spears and hounds; and yet is obliged to come up and "vent" for want of air. In doing this he is sure to fall a victim sooner or later; and as his "vents" become more and more frequent in his increasing exhaustion,

he is at length impaled upon the spear of one of the hunters, and borne aloft in triumph. Sometimes a hound seizes him; but it takes a very bold and strong one to hold him, for his bite is exceedingly severe, and his strength in the water is very great; many dogs have been drowned in their efforts, and sometimes both otter and hound have been killed under water. The spear should be used with caution when hounds and otter are closely mixed in the *mêlée*, or a valuable hound may suffer from the careless thrust of some impetuous hunter.

Upon these general principles the otter should be hunted; but in deep streams without fords it is quite impossible to hunt him with any chance of success. In these situations he takes off at once, and unless the hunters are in sufficient numbers to watch the stream for miles for his "vent," he will probably never be seen again. But if such were practicable, it would scarcely be hunting; for the hounds can take no part in the sport, and the spear must do all the work, if done at all.

The annexed Description of a Run with Mr. Oswald's hounds, in Ayrshire, will afford a good indication of the way in which this sport is conducted without the spear, which, it will be noticed, has been introduced in the directions which have been previously given as being necessary in rivers possessing large and deep pools:—"Exactly at half-past eight, at a signal from the master, John's cheery 'Ho, wind him, oh!' rang through the clear morning air, and opening in full chorus, the pack dashed for the river. No sooner, however, had they rushed to the water, than every hound settled to his work, and not a stone or root escaped their notice. I may here mention for the information of such of your readers as may not be acquainted with the locality, that the river Ayr is broad, though not deep, with rocky and rugged banks, in many places wooded to the water's edge. The coverts are well stocked with game and roe-deer; and it is therefore necessary to have hounds steady and free from riot; and, from the nature of the banks and the number of roots and natural 'hovers,' it is of the utmost importance that hounds should work slowly and carefully, even with a good scent. We had drawn on for rather more than a mile without a whimper, when Rattler, who had swum to a large stone in the middle of the stream, opened, and a 'true bill' was speedily returned by old Comely, Nailer, and Dazzler, whilst the rest of the pack struggled to gain the rock, where old Comely had sat down to discourse sweet music. From this point we had a cold drag for about two miles; but on reaching a celebrated stream, where the largest trout are to be found, 'a change came o'er the spirit of our dream.' Lambton, always the last hound to own a scent, began to cast anxiously from side to side—now trying the water, and now springing from rock to rock, his stern erect and his hackles rising. At last, on a small tuft of grass, he hit it off; his clear loud notes rang through the cliffs, and brought every hound to his side; for well they know that when *he* speaks the chase has begun in earnest. In a moment the rocks and woods rang with the cry of the whole pack, as they carefully followed the zigzag track of the otter, who, contrary to the usual custom, it was evident had fished up stream. I never remember to have seen anything more beautiful. You might, in reality, have covered the hounds with a small sheet; the very puppies entered this season took it up. Forward was still the cry, till he reached the holm below Barskimming House, where there is a large and deep pool; at the lower end is a shallow ford, on the right-hand side a high rocky face, and on the left a steep earth embankment, on which stands a row of old plane trees. On arriving at this pool the hounds were at first a little at fault; it was evident the 'fishmonger' had entered the water by the ford at the bottom. John pushed through the water; with a single twang on his horn, every hound was with him; and, making for the top of the pool, he cheered them on with a 'Ho, cast for him, good hounds.' We were not kept long in suspense. Old Rally, who devotes her attention almost entirely to roots, opened loudly at the foot of a large plane-tree, and was instantly joined by Ringwood; with a dash, the rest of the hounds made for the spot, and we were left in little doubt that the varmint was at home. Pincher and Charlie were now brought into requisition, and disappeared through the open network of roots laid bare by the late heavy floods; they had not been

in above a minute, when a large otter bolted almost through the middle of the pack, and made one long dive, rising in the centre of the pool to see where his pursuers were; but finding them in his wake, he disappeared. It would be tedious to recount to you (though to us, at the time, highly exciting) the various dodges he tried to elude his pursuers—now diving under one root, again lying resting in the still pool, with nothing but his nose above water, and then endeavouring to run the lower ford (this we had manned, leaving him free access to the upper waters). For full two hours he afforded us incessant work; and we were beginning to doubt if the hounds could stand the cold any longer, when he suddenly disappeared, 'leaving not a trace behind.' John, however, had been too long at his work to be done in that way, and, leaving us to watch the pool, he made a cast forward about 500 yards, when the whole pack opened with a burst of music that sent us after them in double-quick time. When we reached the spot, we found all hands busy at a hole, where a severe fight was going on; the voices of Pincher and Charlie were both clearly distinguishable above the deep ring of the hounds as they bayed at the mouth of the hover, from which they were tearing huge mouthfuls of earth and roots, and in the centre of them stood John, up to his middle in water, now swearing at a hound to 'keep quiet,' and now digging with his hands like the best of them. What took place in 'the hole' we could not exactly see, but the earth seemed to give way between the united efforts of John and his hounds, and in a minute or two he appeared with a large otter grasped tightly by the fore-legs, with Pincher, Billy, and Charlie hanging to his mouth like so many leeches. He had just time to change his grip to the tail, when the pack were upon him. But John is not the man to let go; he held on till by the united efforts of three men, he and his hounds were pulled on to the green grass, and then with a 'Hi, worry-worry,' that made the echoes ring, he threw him to them. I never remember to have seen an otter fight so long; he drew blood from almost every hound in the pack, and nearly cut the terriers to pieces. He was a large dog-otter, and weighed exactly 22¾ lb. We found the drag about half-past nine or ten o'clock, and killed him at three o'clock in the afternoon."

Sect. 6.—Dress for Otter-Hunting.

It may readily be supposed that, if possible, waterproofs would be used in this sport; but they are inadmissible for many reasons. First, they are too cumbersome for the active exertions which must be made. This is not like fly-fishing, where the fisherman stands for some time in one spot, but the legs are constantly called into play, and sometimes at a very rapid rate; and consequently, the height and bulk of long waterproof boots would be beyond measure annoying. Besides this, it must be remembered that, unlike snipe-shooting, the season is a warm one, and if the water was kept from penetrating from the outside the interior would be damp, and even wet, from the sweat produced by exertion and excitement. From all these causes, therefore, india-rubber is tabooed.

Flannel is the article in request, and should be worn all over the body. No linen should touch the skin, but fine Jerseys should be worn over the upper half of the body, covered by open but soft clothing in the shape of a tweed shooting-coat or some similar material; whilst plain white flannel trousers or knickerbockers are the best investments for the lower half of the body. Strong shooting-shoes, well nailed, are the best covering for the feet, and good woollen socks should be worn under them. With this clothing, although the wet easily penetrates, it is as easily dried, and no chill takes place from the absence of confinement or of wet linen next the skin. It is only necessary to keep moving till the whole dress is dry, and no ill effects will be likely to follow.

Sect. 7.—Expenses.

The cost of otter-hounds may easily be estimated at 3*s*. per couple per week for the hounds, and 14*s*. to 18*s*. per week for the huntsman; beyond this, and the original outlay, no expense need be incurred.

PART I.

THE PURSUIT OF WILD ANIMALS FOR SPORT.

BOOK III.—COURSING.

CHAPTER I.

PRIVATE COURSING.

Sect. 1.—The Hare.

The hare has already been described at page 108, under the head of Shooting; and again at page 141, in the section alluding to "The Game to be Hunted." For coursing purposes, however, it may be still further remarked that several varieties exist which test the properties of the greyhound very differently, but which varieties are only dependent upon the situation and soil of the localities upon which they are bred. Thus, there are in England down-hares, inclosure-hares, covert-hares, and homeless-hares; and besides these there are, in the sister kingdoms, the Irish hare and the Scotch mountain-hare.

The down-hare is a very fast, yet rather small variety, exceedingly stout and bold, sometimes going right away without a turn from a brace of good greyhounds. Some of these little hares have a wonderful knack of throwing out the greyhounds, without appearing to be very fast, but just contriving to elude their pursuer by a hairsbreadth. They do not stretch far away between their turns, but make them as soon as they are pressed, and, with one eye forward and the other behind, they always manage to escape any but a more clever killer than usual. These hares are found upon all the open and hilly grounds of Wiltshire, Berkshire, Yorkshire, and part of Lincolnshire, and afford better sport in coursing than other hares, because they are so stout, and yet not often fast enough to get clear away without a turn. It is no uncommon thing to see a course of three or four miles with them in which there are more than a hundred turns; but, generally speaking, if the hare lives long enough to elude thirty or forty efforts of the dogs, she is able to get away to her home. It is seldom nowadays that hares are found on the downs, except in the vicinity of coverts in which they are bred; and I know of no locality, where they are met with in any numbers, at such a distance from any home as to be considered down-bred. Formerly, however, this

was the case in many neighbourhoods; but the poachers take good care that it shall not be so now. Wherever therefore, on the downs, hares are not preserved, they are extirpated; and if preserved, they are provided with a home in which they may breed, and where they may be more easily watched and protected. For coursing purposes also this plan answers very well, as the hares can at any time be driven to make their forms in the open, either by fixing a net round the covert when the hares are on the feed—which is the best plan—or by driving them out at sunrise with dogs, when they do not return that day, but sit out at once.

The inclosure-hare, a variety found in the thickly-inclosed farms of the midland counties, is generally a large and fast hare, fond of threading the hedgerows, and too often spoiling the course by so doing. These hares are also generally bred in woods or plantations, but sometimes they breed in the open fields or thick hedges. In any case, as soon as the corn is cut they retire to the nearest covert, and remain there, except for feeding, until the leaves drop off in November. Whether the dislike to these places of retreat at this time is caused by the noise of the falling leaf, or from any other reason, I do not know; but the fact is clear, that as the leaf falls they begin to sit in the open fields, and not till then in any numbers. Much, I fancy, depends upon the coverts being disturbed for pheasant-shooting at this time; and probably this has as much to do with the change of seat as the fall of the leaf, or perhaps more; but still it is undoubted that till that time it is no use looking for hares out of covert when such a retreat is near. These hares will often stand a long time before greyhounds, but mainly from their trying their fencing powers to so great an extent, because the hare does little at the fence, whilst the greyhound has to make an extraordinary effort either to fly over it or through it. Nevertheless, I have often seen inclosure-hares run as stout and as fast as any down or marsh hare, independently of the fences, and in large inclosures of fifty or one hundred acres each. Nothing is perhaps more beautiful than the fine fencing of a greyhound, but it can so seldom be seen that the beauty is wasted for want of witnesses. Wherever the fences are strong enough to try the powers of the greyhound, they are too strong for an ordinary horse in cool blood, nor do the farmers generally approve of riding over such land. The spectator on foot therefore must content himself with a view of the course up to and over the first fence, and imagine the remainder, unless he happens to be posted on a hill commanding a view of the whole course in the distance.

The homeless-hare is one which is bred on highly-preserved land at a distance from any covert; and this variety is now chiefly found on the reclaimed marshes of Essex, Bedfordshire, Lancashire, and Lincolnshire. These hares, when good, are wonderfully strong and fast, and test the merits of greyhounds to their fullest extent; but there is this objection to these hares, that they never go straight away home, but keep running circles, large or small according to their boldness, and thus always favouring one dog more than the other. I have seen these hares make ten or a dozen circles round a ring of a few yards' diameter only, and then break away, and beat their antagonists hollow, which is a feat never tried by hares that own some place of safety as a home. They seldom make the strong short wrenches of the down-hare, but turn more or less at a right angle, and are careless of being brought round.

From the different style of running of these various hares, a dog used to one sort will often find some difficulty at first in running another, and therefore it is well to accustom him to the kind of hare he is to course before his merits are fairly put to the test. The Irish hare is, I believe, a very small, fast, and quick hare, but never having seen her performances, I cannot speak from personal observation of them.

Sect. 2.—The Greyhound.

For private coursing, a different dog is required from that which will suit the purpose of the public courser. The latter *must* have that dog which will win him the stake for which he competes, even if his dog only lasts for a few months—as indeed is generally the case; but the private courser will not like this constant necessity for change, and requires his favourites to continue fit for use at least three or four seasons. Hence, he sacrifices some advantages

for this lasting condition; and is content if he can produce a tolerably fast, stout, and *honest* dog, that will also last honest for three or four seasons. In inclosed districts the dog must also fence well; and, in addition, he must be hardy in constitution to stand the exposure to weather without clothing, to which he is generally open. All these requisites may easily be obtained, and many private kennels have them in great perfection, and produce greyhounds which, in private trials with one another, appear to do as much as any public greyhounds; but when actually put to the test they are found somewhat too slow, and not *quite* quick enough at their turns.

To all private coursers I would offer this advice—viz., avoid most carefully the blood which is found to be successful in public, especially that of the most winning puppies. These greyhounds will not do for the private courser, because he will find that after thirty or forty courses they begin to run cunning or slack, and are then useless to him; whilst his own will run some hundreds of hares before they show the same amount of lurching propensity. The drawback is a serious one to the public courser; but as he breeds for a specific purpose, and can only succeed by selecting that blood which is most successful, he must put up with the inconveniences, and do the best he can with them. Unless, therefore, the private courser will make up his mind to breed a fresh team every year, he must stick to private blood, or to some of the most true and honest strains which appear in public. The reason of all this is very clear: if the intellect of the dog is sufficiently developed to make him take to his business very quickly and well, he will also be quick enough to learn more than that, and he soon finds out that if he husbands his resources he will obtain his end much better than if he exerted himself too much at first. Hence he is of early maturity (mentally), but early decay. If the private courser is a pot-hunter, these dogs are often the best killers; but as I am assuming that he pursues coursing as an amusement, for the purpose of competing with his neighbours in a friendly way, and not solely to kill hares, I do not for a moment look at his wishes from that point of view. The man who habitually takes a brace of cunning greyhounds out solely to kill hares is no sportsman, though anyone may sometimes do so when he wants a hare; and, as I write for sportsmen, I will not insult them by supposing such a thing.

The greyhound for private coursing may be obtained from any of the districts where this amusement is carried on; but some of the best breeds are very difficult to get at. Indeed, I believe some private greyhound owners would not allow their dogs to be used on any consideration whatever. This may appear very absurd, but I do not look upon it in that light, because though they may be easily beaten by many greyhounds, they would not so easily succumb if the match was to be run on three occasions—that is, once during three successive seasons. Having decided upon the blood which will suit him, let the intended greyhound owner get a brace of whelps if he can, or a brood-bitch, and put her to a dog of similar strain of blood. For private coursing, there can be no doubt that the best mode of rearing those whelps is to send them out to walk until they are about ten or twelve mouths old, when they should be brought home and regularly exercised for the rest of their days till done with. If the brood-bitch is obtained, and is bred from, she may be treated in the same way as any other brood-bitch. No one in private coursing will take all the trouble and go to the expense requisite to insure success in the public coursing-field, and therefore all that need be done is to treat her in the same way as pointers, setters, &c.

For private running I would strongly advise that the greyhound should not be entered until he is at least eighteen months old. These greyhounds do not come to maturity nearly so soon as the public kinds, and consequently they should not be entered so soon. Besides, there are not the same reasons for the early entering, since it matters little whether these puppies are shown a hare in November or December, and therefore they may just as well wait till their frames are knit before they are tested so severely as the hare tries their bones and sinews. This postponement is particularly needful, because the private greyhound is seldom quite fit to run when slipped

at the hare, and is also often slipped several times in the day; so that in every way he is more tried than the public one, and should be older before he is brought out. Many good private coursers take great pains to insure good exercise and general management for their dogs, and they almost always beat all their neighbours by so doing; but few go to the length of training them, and are content to allow them to gallop themselves into wind, if they will. It is wonderful what condition will sometimes be obtained in this way; but, generally speaking, after a short time the dog becomes lazy, and refuses to exercise himself sufficiently to remove his superfluous fat, or to get himself in wind; if, therefore, it is desired that he shall be able to course his shares without distress, he must be trained in some way or other, and horse-exercise is the easiest mode of obtaining this. Most greyhound owners are also horse-keepers, and if they send out their horses to exercise, they may just as well let their greyhounds accompany them. This, if done daily, will produce a tolerable degree of condition, but the greyhound will often be terribly distressed in a long course if only treated in this way. Unless, therefore, the courser is in the habit of running his dogs once or twice a week, he should certainly give them a few slips to improve their wind. To do this, all that is necessary is to take them up in couples, then send on their feeder half a mile or so up a moderately-steep hill, if possible, and have them held by a stranger till he whistles to them, when they should be let go. This improves the wind if repeated once or twice, and by its adoption the greyhound may be got into pretty good condition. An occasional dose of physic should also be given, consisting of a spoonful of castor-oil, or an ounce of Epsom salts dissolved in cold water. Attention should of course be paid to health, as in ordinary dogs. For private purposes clothing is not requisite, nor do I think it desirable, except when standing about the fields in very cold weather. Here a cloth is indispensable, and the dog without it is chilled, and rendered unfit for exertion on that day, and generally for some time afterwards.

THE FEEDING OF GREYHOUNDS for private running should be principally on Indian-corn meal and oatmeal, either plain boiled or made into bread; if the latter, the flour of the Indian-corn must be finely ground; but if only boiled, hominy answers perhaps better than meal. It requires several hours to boil it, and it should be done at least two hours longer than the oatmeal. It is, however, a very good and cheap meal for all dogs, and answers particularly well for greyhounds. This should be the staple, with milk or buttermilk. On two or three days in the week they ought to have from ½ lb. to ¾ lb. of meat well boiled; and on the alternate days, if they have not got the buttermilk, they should have a few greaves. Once a week they ought to have a few greens, or potatoes, or carrots, boiled up with their meal. Greyhounds kept in this way are not quite so hard and fit to run as if fed on stronger food; but they keep in better health longer together, and will generally be fit for what the private courser wants, viz., a course or two whenever the opportunity offers.

With these few remarks I shall pass on to other matters, only reminding the private courser, that if he wishes to go to the full length of which the subject is capable, he has only to study the chapters on "Public Coursing," and then he will obtain the information. My object here is to place before the private courser the usual mode in which private greyhounds are managed, and the amount of trouble to which he must go in order to be on a level with his neighbours and rivals.

SECT. 3.—THE GROUND.

It is unnecessary for me to remark, that greyhounds are of no use unless there is ground to try them upon; if, therefore, the proprietor has none of his own fit for the purpose, he must obtain leave from those who have. In most coursing districts there are certain estates which are thrown open on fixed days to the public, for the benefit of the keepers, or of some landlord of an inn, generally an old servant of the proprietor of the land. But, supposing the land belongs to the courser, he will find that in all cases hares must be driven out before they will sit, and he will shoot the coverts the day before he intends to course, or have them driven expressly for the purpose. If

he has the farm in his own occupation, he will of course choose such times when the fallows have been quiet for some little time—that is to say, if these are the fields which he intends to course over. It is seldom that private coursers have much choice of ground, and they content themselves with what they can get.

Sect. 4.—The Beaters.

Wherever it is determined to course, beaters are requisite, unless five or six gentlemen on horseback are present. But whatever is the mode adopted, a line should be formed, placing one beater at every thirty yards, and proceeding abreast of one another from one extremity of the field to the other. Much art and experience are necessary to insure the best management of the ground, for often a hare may be sent the right way by careful beating which would have been otherwise at once lost to sight. When a field lies near a covert, it should be regularly beaten *from* the covert, and not *towards* it; and after taking a breadth of land away from the covert, the beaters should take what is called "a dead beat" back—that is to say, they should return to the covert over the beaten ground, and should not attempt to beat the ground *towards* the covert. By these means hares are often driven the right way; but the worst of the plan is, that they generally wheel short round after the first turn, and come back to the same covert, which they have been already prevented reaching by the "dead beat." When a beat is taken along a hedge-side, the beater nearest the hedge should be at least ten or fifteen yards in advance, in order to prevent the hare running at once to it and escaping altogether. If a hedge is being beaten, the horsemen should all range themselves on the side opposite to that where the greyhounds are; and the foot beaters should be a little in advance of the dogs. The slipper and dogs should be the only party on the side which the hare is wished to face. Sometimes a small field of turnips or potatoes, &c., borders on a good large open field; in such a case it answers best for the slipper to remain in the latter, quietly concealing himself as much as possible at a short distance from the meuse, and waiting till the hare is driven through it. If now the beaters form a half-circle, they may drive the hare or hares to the greyhounds; and will thus obtain what would otherwise be impossible, a good course. In driving small plantations, &c., the slipper should remain just outside, if possible, concealed from the hare's view as she comes out by a tree. Hares driven out of covert, however, seldom run straight or well; and the plan should not be followed if it is possible to avoid it. In the early part of the season it is the only mode of getting a run; but for private coursing there is no great object in beginning so very early.

Sect. 5.—The Slipper

Is a very important functionary in private as well as public coursing. He should be taught to run well with his dogs, and not to stop running till after he has slipped them. Practice, however, is necessary for perfection, and few obtain it with that amount which private coursing usually affords. The great object is to slip without a jerk, and not to deliver the dogs unless they are both sighted, and equally strong at the time. He should walk about five or six yards ahead of the beaters, and should never be behind them. If, therefore, he is not able to keep up with the horsemen, they must slacken their pace; for no plan is so bad as to distress the slipper, or put up hares so wild as to be beyond his reach. If the slipper is distressed, he cannot run forward, and the consequence is, that the dogs are badly slipped; and if the hares get up too wild, he has no time to get his dogs sighted and straight on their hare before she is out of their reach. In almost all cases the slipper should have some one to give him his orders to slip, and he should, on receiving the word "go," slip his dogs as quickly as possible.

There is a great variety in the make of slips, everyone fancying that particular form which suits his own ideas of perfection. The essential feature is the delivery of both dogs at the same moment, with smoothness, and with as little jerk as possible. No slips answer better than the old crane-billed make; but they take a long time to put together. The Shrewsbury slips are, however, those which are most commonly used in public coursing.

Sect. 6.—The Judge.

All coursing, whether public or private, is in the nature of a competition, and that cannot possibly be settled without a judge; one should therefore be appointed for the day, and this precaution will often save a disagreeable squabble as to the various merits of dogs. It is very seldom that the two owners see the course with the same eyes, and the aid of a third and impartial party is required to set them right upon disputed points. Even then, if no person perfectly *au fait* can be found, it is better to nominate a judge of some kind, whose decision shall be final, than to go on quarrelling about the merits of each other's dogs to the end of time.

Sect. 7.—The Course.

No reason can be assigned why a series of courses in private may not be as good and as interesting as a similar number in public. If the ground is good and the hares equally so, and if the greyhounds are well matched and of good quality, no reasonable man can contend that the courses may not be identical with those exhibited in public; nevertheless, it is an admitted fact that, generally speaking, it is not so; and that private coursing is very inferior to what we sometimes see in public. It is true that the best ground is generally reserved for public coursing, and that when hares are not preserved for the purpose they are seldom thick enough for the amusement of the spectators; but independently of these considerations, there is seldom sufficiently good management to insure good sport. I have seen, on some occasions, private coursing conducted with as much good order as is often observed at any public meeting; but these cases are exceptional, and must not be taken as the rule. When the hare gets up, either after a "Soho!" or when getting up wild, the dogs should be held till she is from 50 to 80 yards off, when they should be slipped as already directed. Sometimes, when a hedge is very close and the hare is making straight for it, it is better to slip at 30 or 40 yards than to lose all chance of a course; but it should seldom be allowed under 50 or 60 yards. After the course the dogs should be taken up, and another brace put in the slips. It is very common in private coursing to run the same dog four or five courses in the day, if they are not very severe; but more than these should seldom be allowed, as they only serve to exhaust the dog, and to make him run cunning much sooner than he otherwise would do. It is a good plan to take a little boiled mutton into the field, and give the dog about an ounce after each course, if he is intended to run again. If he is much exhausted, he will of course not be allowed again to go into slips.

Sect. 8.—Rules for Private Coursing.

It is usual to judge the course in private exactly under the same rules as in public; and I shall therefore here refer to the rules, which will be found at length under "Public Coursing." It is not a little remarkable that all which I have described as the usual mode of conducting this sport in the present day was practised in the time of Arrian, A.D. 150, who wrote a long treatise on coursing, containing all that is now known on the subject, and describing the course with as much exactitude as could now be done by the most ardent votary of private coursing.

CHAPTER II.

PUBLIC COURSING.

Sect. 1.—Its Recent Date and Importance.

In the chapter devoted to private coursing, I made the remark that the sport known by that name was fully known in the time of Arrian, and described by him A.D. 150. Public coursing, however, only dates back to the time of Charles I., when several matches are recorded to have been publicly decided; but since that time the number and frequency of public coursing meetings have so much increased that

last season (1874-5) there were run for in the three kingdoms more than 800 stakes, the total value of which exceeds 37,000 guineas; besides which there were 85 silver cups added, varying in value from 10*l.* to 50*l.*, so that altogether the amount reaches about 40,000*l.* This appears a very high sum to be invested every year in so useless a sport; but, when it is remembered that it is spread over a very large extent of country, among more than 1000 coursers, it does not seem too large a sum for the year's amusement, and the improvement of the health of so many people; and no one would, I think, contend that these are dearly bought at that price, even if to it be added the outlay on a brace or two of greyhounds for keep and training.

It must be borne in mind, that this sport is essentially confined and proper to the middle classes of society; for though some noblemen still condescend to partake of its allurements, they are the exceptions to the rule, and the great bulk of its supporters are those gentlemen in middle life who are neither noblemen nor even men of large landed property. It is therefore fortunate for them that so many liberal land-proprietors throw open their preserves once or twice a year to the use of their neighbours, for without assistance of this kind the sport could not possibly go on. But, with this generous and considerate help, the man of moderate means can enjoy the amusement with even greater zest than the proprietors of those large kennels which formerly used to sweep everything before them. At a very recent date, and long within my memory, Lord Rivers, Mr. Goodlake, Lord Stradbroke, and Lord Eglinton were possessed of kennels of greyhounds so strong that no ordinary individual had courage to pit himself against them; and though some few members of the various clubs continued to contend against them year after year, it was a hopeless and vain struggle, and was persisted in more from a desire to be seen grimly struggling to the last than with any hope of victory. But all this is now changed, and the tenant-farmer or the professional man has as good a chance, or even a better one, than the most wealthy and large-acred nobleman. "If a thing is to be done well, it should be done by one's self," is a very common adage, and well exemplified in the case of the courser; for he is the most successful who, understanding the whole *arcana* of the business, sees himself that they are practically carried out. This few of those in high places will do, and then, in consequence, they have a "pull" against them. Again, they are tempted into keeping great numbers of dogs, which it will hereafter be shown is a great cause of failure; so that altogether it is no wonder if they are sometimes less successful than the money and talent they bestow on the subject ought to insure.

The sport, however, from many of these causes combined, has become a popular one with the middle classes; and they ought to be grateful for the facilities which are afforded them by owners of preserves, among whom they are chiefly indebted to the Earl of Sefton (for the Altcar Club and Waterloo meetings), Earl Craven (Ashdown), Duke of Roxburgh (Border), Earl of Home (Scottish National), Earl of Stair (Wigtownshire), Lord Londesborough (Scarborough), Earl of Lonsdale (Knipe Scar), Lord Lurgan (Lurgan), Sir J. D. Astley (Brigg), Sir F. Graham (Border Union), Mr. Rowland Winn (Barton-upon-Humber), Mr. H. Chaplin (Blankney), Mr. H. C. Vyner (Ripon) Colonel Clifton (Ridgway Club), and Mr. R. Jardine (Corrie), whose examples are followed in numberless instances on a smaller scale.

Sect. 2.—Difference from Private Coursing.

Between these two sports there are important points of distinction, which are not so evident to the cursory glance of the unlearned as might be imagined by those who are fully initiated into the mysteries of coursing. In private coursing I have already observed that everything *may* be conducted on the same principles as in the public field; but this is the exception, and the rule is, that most men in private go out for the sake of killing hares, and not for the purpose of competing with their neighbours and friends. Those who do this are only intent upon the death of the hare, and accomplish their object often by mobbing her, or by starting her again with spaniels from her retreat in the covert which she has gained. This I

have known done by old coursers to such an extent as to course the same hare three or four times in one day, driving her out of her covert, and after losing her, putting spaniels on her scent, and again and again coursing her, till at length she succumbs. This of course would only be practicable in inclosed districts where there is a series of small coverts, and where hares easily beat greyhounds, unassisted by other dogs; but I confess that the sport, if worthy of that name at all, has no charms for me, and that I should despise myself for partaking in such a bastard kind of hunting, for it certainly cannot be called coursing. In any case, private coursing is too often converted into a "pot-hunting" kind of business, in which the hare is the great object of the pursuit. On the other hand, in public coursing the hare is only a means of trying the powers of the dogs, which are pitted against one another, and her capture or escape is not immediately connected with the success or failure of the sport. It often happens that the best course of the day is a bloodless one, and no good courser measures its beauty, or the goodness of the greyhounds engaged, by the same criterion which the private "pot-hunter" employs. The public courser's whole study is to excel and outrun all his competitors; and for this purpose only does he breed and keep his greyhounds. Many good coursers never see their dogs run in private, and will never attempt to form an opinion of their respective merits, for fear of condemning a good greyhound on insufficient grounds. Certainly this is, in my opinion, a weakness on their parts, though a very amiable one; for I can scarcely understand anyone being afraid to judge amongst his own dogs, though it is very clear that few are capable of estimating their performance as compared with those of strange, and perhaps superior, kennels. This, however, does not alter the bearings of public towards private coursing, but it makes very clear the distinction between the two varieties. The one is the pursuit of the hare for sport; the other is a trial between greyhounds, using the hare only as a means of developing their powers, but quite ready to dispense with her if the trial could be efficiently made in any other way. Thus the one is a sport which undoubtedly comes within the present department of British Rural Sports, viz., "the pursuit of wild animals for sport," whilst the other would perhaps more properly be considered as a branch of racing. But with this double difficulty before me, I preferred adhering to the old definition, and have consequently retained both descriptions of coursing under this head.

Sect. 3.—The Public Greyhound.

Since there is but one object in keeping the greyhound for public competition, and that object is only attained by success, it is quite clear that by success must the greyhound be tested, and for success must he be bred. I do not mean to say that you can measure his value by his money-winnings, because luck is a most important element in public coursing; but I assert that by his success, or *his fitness to obtain it*, must the greyhound be estimated. Many greyhounds have had a series of misfortunes, and yet have been first-rate dogs, and have been considered such, though never victorious over good and large fields. There are so many elements necessary to this achievement, that it is no wonder that many fail without deserving their failure. A dog may get one or two undecided courses from hares dividing, or from a variety of causes, and this may put out his chance of a stake; or he may, in his excess of courage, lame himself, and yet be the more admired in his failure than the steadier runner that has won the stake. But in spite of all these exceptions to the rule, it is nevertheless a true one, that success in the long run is the best guide to the selection of the best dog. This, therefore, is my test; and upon this test, as a definition I shall proceed to consider the points and merits of the greyhound for public running. In any other point of view there is an endless scope for controversy. One party may say, "Oh! we do not want speed, we want bottom;" another may care less for bottom than for speed; whilst a third may disregard both, and stick to working properties as the test of the true greyhound. All this is a mere matter of taste, except as tested by

success in public contests; but with that criterion in view, all these private opinions sink into the shade, and the result is that we all direct our efforts to produce what will insure its being grasped. It must be remembered, that this success is obtained under certain rules, and that the greyhound is not pronounced the winner according to the particular fancy of any man or set of men, but he is tested in such a way as (theoretically) shall decide upon his doing certain things in accordance with known and recognised rules; so that, after all, we have only to consider what greyhound is best calculated to effect those purposes; and this is the sum and substance of the present section. It will hereafter appear that, according to those rules, the properties of the greyhound are estimated in the following proportions: first, speed; secondly, working and killing powers; thirdly, stoutness or bottom; and fourthly, courage.

SPEED is a quality which is very easily understood in the abstract; but it should be examined more closely when considered in reference to the greyhound. It may be divided into speed from the slips, and speed from the turns.

SPEED FROM THE SLIPS is variously displayed, according to the quickness of the particular greyhound. Thus, he may be slow immediately from the slips, yet soon afterwards increasing in pace, and going on to a perfect torrent in velocity. With some judges this was formerly a very great point, since it scored four to begin with; for they counted this feat as a "go-by," though on what principle I cannot imagine. A dog which goes quickly out of slips, and reaches the hare first by thirty lengths, was only allowed two points, while another which suffers his antagonist to get the start for a few yards, and then goes by him, and only reaches the hare by a couple of lengths, was allowed to score four. Can this be justified on any grounds? I think not. Speed is the only foundation for the decision in both cases; yet the one which is thirty lengths faster than his antagonist counted only half as good as the one which is two lengths faster. I much admire that kind of speed which goes on smoothly, increasing in pace from the slip to the turn; but I think that the dog who thus runs is sufficiently rewarded by his after-power of working; for I am satisfied that the very courageous dog which starts from slips as if ready to burst himself, really does injure his chance materially by so doing, independently of his being robbed of the due reward for his superior pace. But so long as speed is the only criterion for judging of the first turn, I cannot consent to this mode of estimating it, and the practice now is not to score, but "go-by" and "speed to the hare." If it were possible to do so, I would always breed so as to insure the increasing speed, for the reasons I have given above; but I would not punish the contrary, and make the most praiseworthy effort of the greyhound to reach his hare a double means of insuring his defeat. Hundreds of dogs burst themselves by their excess of courage, and must fairly suffer the penalty; but they should not certainly be deprived of that which they have earned; and if more than one point is ever to be allowed for speed to the hare, over and above the turn, it should be given to that very superior speed which either insures a long lead of twenty or thirty lengths, or a lead on outside ground; but no trumpery lead of one or two lengths, wherever gained, ought to give more than the one point for speed in addition to the turn; in all, two points for the cote, or first turn. It is this outgoing speed which characterizes the public greyhound; he is the thorough-bred racer among dogs, and the points which give the faculty are easily recognized by the eye, though all dogs which have them are not necessarily fast. These points are—first, length from the hip-joint to the hock, *when extended;* and secondly, powerful and flexible shoulders.

SPEED FROM THE TURNS is a somewhat different quality from the above; but it is generally met with in the greyhound which starts well from the slips, if he is clever, and of good bottom. A dog may be able to get well away at first, yet be so soft that he tires himself in his first effort, or so slack that his courage is already exhausted. He therefore seldom does much after the first turn, but subsides into a second place, and is easily beaten by a much slower animal. He may get a turn now and then in the course; but if the hare is a good one he generally succumbs without a fight. On the other

hand, the stout and yet fast dog, (which is a rare combination) not only gets first from the slips, but also, after turning his hare, he is first away from his turn, and is at her again ; that is to say, if he can stop himself so as to start "even with his fellow." This point shows the perfect greyhound, and it is one which catches the eye of a good public judge sooner than any other. It should therefore, as the cause of success, be carefully prized, and the blood which produces it should be diligently sought for. Next to these comes the speed which produces the "go-by," which is not necessarily connected with working power, but may be possessed without that attribute. In this kind of speed there may be no control over the exertions at all ; but after the first turn there may be little or no power of stopping, and in the interval the other dog may get on the line of the hare and obtain a considerable lead. Being, however, a slow dog, the fast but bad worker, if the hare also is a fast one, is enabled to go by him and score two points, even if he cannot turn the hare from his deficiency of working power, or from its being too fast for him. Of these three kinds of speed, that one is the most valuable which leads off and maintains the lead, and which also is accompanied with stoutness sufficient to enable the dog to get away from the subsequent turns. In shape this is characterized, in addition to the two points already specified, by the possession of a muscular back, without which it is seldom attained ; but, over and above all, there must be a good heart.

Good Working and Killing Powers are generally co-existent, though not always so ; for some of the best workers are, and always continue, bad killers. But in most cases the power which gives the capability of turning the hare, *and of keeping her line afterwards*, also gives the capacity to kill. Sometimes, however, there is not the will ; and this is very common in the puppy, who often does not attain the tendency to kill until the end of the first season. Of this late-killing *tendency* the celebrated Mocking-bird was an extraordinary example; whilst Figaro, her sire, never had the *power*, and ran a great number of hares before he ever tasted their blood ; yet his progeny have been generally good killers rather than otherwise. Many other examples might be given, but it will suffice for me to assert, as an undoubted maxim, that both these powers are of the highest importance—first, as scoring quickly, and thereby gaining the course ; and secondly, as quickly ending it, and thereby enabling the winner to meet his next antagonist on favourable terms. The working of the greyhound is very different in different breeds, and even in varieties of the same breed. There is sometimes the bold, vigorous, and determined rush at the hare with the desire to kill ; this produces a turn, and generally a full turn ; and it is varied according as the rush is made straight at the hind-leg, or at the side, or at the shoulder. If the rush is made at the hind-leg, well on the line of the hare, and with a good command at the turn, it is very beautiful ; and when united with good bottom and speed, is, in my opinion, the perfection of running for most countries. In the last case the line of the hare is left, more or less, and she is attacked on a line slightly varying from hers, but still parallel with it. This is called "not running the line of the hare," and is considered a fault for many reasons. Next, there is the steady line-running worker, who goes fast to his hare—running to her scut, and yet not rushing at her for fear of bringing her round, and thus losing ground at the turn. If this is executed with sufficient speed so as to press the hare well and forcibly, it is a most winning style—especially in such countries as Wiltshire or Berkshire—because the hare does not come round, and the competing dog cannot, or does not, get in for many wrenches in succession. But too often the dog which works in this style does nothing really with his hare ; he merely turns as she turns, and, instead of commanding her, is only commanded by her. He therefore is easily beaten by a more courageous dog, although with an inferior one he looks, to a common observer, a very formidable antagonist. Such an animal is just the one which leads on the young courser till he is put out by a good dog ; as, from his apparent power of working, he thinks he is a very superior performer. Nevertheless, such dogs often win courses, though they do not deserve them : because, though they do nothing with a fresh

and fast hare, yet when a hare has been well knocked about by a fast greyhound, and reduced in pace (to the great reduction also of the powers and speed of the greyhound which has effected this alteration), the slow and good worker, as he is called, comes out to great advantage ; and, after turning *behind his hare* ten or a dozen times, is enabled to pick her up. Such is the conclusion of many courses in every public meeting ; and by the inevitable decision, the *coup de grâce* is given to a comparatively good greyhound by an animal which never would have turned his hare at all but for the early assistance of his discomfited antagonist.

Besides these varied styles of going at the hare, there are variations also in the dog's coming round when she turns ; thus, he may stop short and wheel round on his hind-legs by the power of his shoulders ; or he may run a segment of a circle without attempting to stop himself, but rather to contract his circle. Many degrees of these styles are seen, but all kinds of coming round resolve themselves into one or other of these two. The former is *generally* the mode adopted by slow dogs, the latter by fast ones—though many very fast dogs have the power of stopping themselves quite suddenly ; and some dogs display each mode at different times—sometimes adopting the one style, and sometimes the other. Indeed, it is wonderful to see the power which some dogs possess of accommodating themselves to circumstances, and more especially to the nature of their hare. Some must have a "good hare ;" some want a short-running but stout hare ; and some like a decidedly bad hare : but others can display their powers with any hare, and seem different dogs altogether with fast and slow hares. Again, in killing, great difference exists, some dogs seeming to be able to run into their hares without a turn, while others, as fast from the slips, never dream of killing till they have tried the effect of half a dozen turns. There must be a power of fascination like that of the rattlesnake in some dogs, or they never could run into their hares one after another as they do. No attempt seems made to escape from their jaws, but the hare succumbs without trying a turn. The external conformation which usually accompanies this power of turning and killing is not very well marked ; indeed, it may be said that it is impossible to foretell by the form what working power the possessor may exhibit.

Large dogs are often said to be bad workers, but many examples to the contrary might be adduced. Again, speed is thought to be incompatible with working power ; but here again many examples to the contrary are well known ; though it is manifest that, *cæteris paribus*, a slow dog can turn closer than a fast one. Still, though he may be able to turn more closely, he does not work better, because he does not really do so much with his hare, and though he turns on less ground, he does not knock his hare about and reduce her speed in the same way as the faster dog. I am quite satisfied that working power is inherent in the breed ; and its seat is in the nervous system. This will be made clear in examining the various breeds, in some of which you see the same good style of working pervade every make and shape, whilst in others you see bad workers with forms which you would fancy the models of perfection. The fact is, that for perfect working a considerable degree of mental activity and quickness is required, which shall enable the dog to do enough to distress the hare without distressing himself. A good greyhound is never a fool, whatever may be said by old-fashioned coursers. Depend upon it, that a greyhound soon learns to know all the motions of the hare, and is prepared to defeat them ; and this tact he learns often before he has ever seen a hare, by chasing his companions in their play. Cunning is often acquired in this way, but sufficient knowledge must be somehow obtained, and I believe this is the best mode. There is a great difference in the ways of starting off in the play ; some go off straight ahead, without trying to throw out their pursuers, whilst others spurt here, there, and everywhere, and are generally good workers themselves, and also the means of making their playfellows equally good. All this, however, is mental and not bodily, and no clue can be gained to its possession by any guide of which I am aware. Remember that too much knowledge or cleverness soon leads to lurching, and that in proportion to its rapid development will in general be its speedy decay by that dire malady.

The extent of the killing propensity I believe in most cases to depend upon a proper development of the posterior part of the brain occasioning a width across the ears which accompanies the dog of high courage in most cases. But so little is known of the nervous system, that further than this I can give no clue to its mysteries.

STOUTNESS depends partly upon general muscular development, without which it can scarcely exist; but chiefly upon the state of the heart. This is well known in all animals, and the phrase is founded in truth which says that such a horse or dog "has got a bad heart." By this is meant that he succumbs to fatigue without a struggle, and that he does not use all his efforts when tested. Now this may arise from two causes—first, from a want of tone, so that the muscles cease to act, and become powerless, which is, in fact, a want of what is called *stoutness*; and secondly, from a want of *courage* to bear difficulties, fatigues, and punishments. The first is that which I am now considering, and is not confined to the brain, as far as I believe, but to the whole nervous system. Thus a man may be intellectually of a very low grade, and yet very stout, and able to bear fatigues and punishments of all kinds well, as we see strongly exemplified in the prize-fighter. He is often a mere machine, incapable of acting on the offensive to any brilliant degree, but able to bear such an amount of punishment as would annihilate a frame composed of more highly endowed and sensitive materials. So with the lower animals: the weasel, the polecat, and even the common cat, will bear with impunity such injuries as would destroy half a dozen lives in some of the more highly-developed animals, such as the dog or the monkey. All this shows that there is a vast disparity in the power of endurance displayed in different animals, and that it is a negative quality altogether, resembling in its attributes the characteristics of the true bulldog. This animal is not so remarkable for courage as for obstinate perseverance in his purpose, so that he will suffer himself to be cut to pieces before he will let go his hold. Many dogs will attack a bull, or even a tiger, just as boldly as the bulldog; but they will not bear their injuries without flinching, nor will they continue the attack regardless of all resistance, like the high-bred bulldog. These attributes, then, are said to reside in the nervous system, because we do not know where else to locate them; and the ordinary name by which they are recognised is stoutness, pluck, or bottom—the former being that which is usually applied to the greyhound.

COURAGE in the greyhound is the climax to all his other qualities, and without it, though ever so good in form, he is disinclined to use his powers, and is utterly worthless. What advantage is it to possess a dog as fast as the wind and as clever as a Solon, if he will not exert his powers, or if he succumbs in a severe struggle, or provided he has a fall or a broken nail? On the contrary, it leads to a loss instead of a gain, because stakes are paid, and expenses incurred, in the hope of success, which is marred by a want of that essential point whose properties I am describing. It is the quality which imparts vigour to act and courage to bear whatever may befall the dog; and it is the one which puts the final touch to the general properties which, without it, are useless, because they are not put into operation. The greyhound is unlike the racehorse, in that he has no persuaders at his side or whip over his neck; his own spirit is his only motive, and therefore, without that stimulus in full perfection, he is a dull and useless cub. But beyond the formation of brain already alluded to, I know of no external mark of its development; and here again breed is the only probable guide to its existence. Some of those whose courage is of the highest class look dull and sleepy till they are animated by the game before them; while again many lively and apparently high-couraged dogs quickly give up under the slightest punishment or distress. Hence it may be said that no rule can be laid down on the subject of either stoutness or courage, founded upon the appearance or form of the greyhound.

EXTERNAL FORM.—Such being the general qualities which must be possessed by the greyhound that is to be successful in public contests, let us now examine into the external form most likely to insure that success. This can only be done by comparing the shapes, size, weights, and colours

of the winning greyhounds with their defeated antagonists, and endeavouring to deduce certain rules from the facts which come out in the inquiry. I shall therefore begin by investigating the shapes most likely to insure success; though at the same time there can be no doubt that the greyhound, like the horse, can run and win in all forms.

The Head, I have already remarked, should be wide behind, and should be considerably larger in circumference, if measured over the ears than over the eye-brows. For dogs of good size, I believe the measure over the ears should be about 15 inches; and for bitches from 14 to 14½ inches, according to the size of the head, which is sometimes very small and neat in them without injury. The jaw should be very lean, with a good muscular development on the cheek, which gives a strong hold, and enables the dog to bear his hare in striking at her. The head of the greyhound is compared to that of the snake, but it is a far-fetched comparison, save in the flatness of the top, and the width, which certainly are points of resemblance; the nose, however, is so different that the likeness is a very poor one. The teeth should be good, and in young dogs white and free from tartar; indeed, in a well-reared dog, the whiteness is of such a kind as to excel the finest ivory. This is a strong mark of good rearing, and indicates the habitual use of bones, the gnawing of which not only cleans the teeth but aids in their formation, and also increases the general health of the whole system. The eye should be bright and tolerably full, though I have never been able to satisfy myself as to the general possession of any one kind of eye by good public greyhounds. I have seen, I think, as many of any one colour which can be mentioned as of others common in the greyhound. So with the ears; different breeds are so very variously furnished with this appendage, that nothing can be made of it as a sign of good or bad qualities. Some good ones are possessed of falling, soft, and broad ears; others of sharp and screwed-up ears; and others again of foxy, pricked ears; and these are very remarkable in the descendants of Dr. Brown's Heather Jock, who often inherit this peculiarity to the third and fourth generation.

The Neck is a very beautiful part of the high-bred greyhound, and is properly compared with that of the drake, though not quite coming up to the elegance of that bird. In many breeds, however, the neck is extremely long and swan-like; and this point gives great power of reaching the hare without losing the stride, which would be a fatal drawback in the fast dog. Some of our best breeds are very remarkable for good heads and necks; as, for instance, those of the blood of Mr. Campbell's Canaradzo, which possess these organs in great perfection, and are very remarkable in most instances for killing powers. In a well-formed dog, the junction of the head with the neck ought to be midway between the point of the nose and the front of the shoulder-blades.

The Chest and Neck together constitute the body or trunk. The Chest is a conical cavity adapted to contain the lungs, heart, and great vessels, to protect them from injury, and to inflate the lungs by enlarging the capacity of the chamber which contains them. Such a cavity must therefore be of sufficient volume for the first purpose, of sufficient strength for the second, and of sufficiently varying capacity for the third; and all these offices the chest of the greyhound efficiently performs. But not only must it be thus formed, but it must also be so flattened on the sides that the shoulder-blades shall lie smoothly upon them, and have free play to extend themselves. In order to meet all these requirements, the chest of the greyhound is deeper than in most animals, so as to give increase of volume without separating the shoulders too much, or placing their blades upon too convex a surface. But if the chest is prolonged too far downwards, it strikes the ground in the efforts made to stop the speed at the turns, and in that way is prejudicial to the going of the dog. Thus, a happy medium is required in this department, and the chest must be wide, but not too round, and deep without being so much so as to interfere with the working powers. Besides these two points, it is important that the ribs shall be well separated from each other, so that they may expand the cavity properly, otherwise respiration is not performed with sufficient power and velocity. This width o

the spaces is known to exist by the comparative length between the breast and the last rib at the loin; but, again, this must not be too great, or the back is rendered weak, and incapable of those vigorous and quick efforts which the gallop requires. By a reference to the anatomy of the dog, it will be seen that the chest is composed of various bones, together making this framework, and moved by muscles which are attached to them, so as to expand and contract in the actions of respiration. To the upper and hinder part of the chest the BACK is firmly attached, the muscles of that important part in the greyhound being inserted into the necks of the posterior ribs. It may be said to connect the fore-quarter with the hind, and to be one of the chief means of producing those extraordinary strides peculiar to fast gallopers. It is composed of a flexible, bony centre, part of which runs up between the ribs, and is also a component part of the chest; while the remainder is free in its middle course (constituting the true loin), and attached behind to the pelvis. But it is more especially in the *muscles* of the back that the powers of the greyhound reside, though these again are partly indebted for their capabilities to the bones upon which they lie. It is quite clear, that unless the angles of the ribs are wide apart, and unless the hips (or couples, as they are commonly called) are also wide and free, there cannot be a full development of the muscular structure, for want of framework to lie upon and contract. Therefore, though a good frame is necessary to form a good back, it does not always follow that it shall be accompanied by that greatly-to-be-desired point. The old coursers desired "a back like a beam"—that is to say, with square edges, and as if chopped out of a block. This I have never seen fully displayed except in one or two dogs, which were by no means good performers; and I attach more importance to depth and volume of muscle than to squareness of the edge. The back ought to be well let into the shoulders—that is to say, the muscles which compose it ought to run well forward towards the shoulder-blades, and should leave a strong ridge of muscle standing up above the ribs on each side of the spine. This is a very important point, and one which almost every good greyhound exhibits. Its absence betokens great weakness, and a want of endurance; for though the dog may be fast without it, he is seldom capable of continuing his speed. Another very important shape in the back is the due development of the muscles *under* the spine. The back itself consists of four bundles of muscles, separated from one another by the spinous processes which project upwards, and also by the transverse processes which project out sideways. Now these transverse processes divide the upper muscles which straighten the back from the lower ones which arch it, and the latter are the main agents in bringing the hind-quarters forward after the stride is taken. It is, therefore, upon them that this action depends, and without their proper development the hind-legs do not sufficiently come forward to enable the dog to arrive at high speed.

The essential points, therefore, are—first, sufficient volume of muscle; secondly, its being well carried forward to the shoulders; thirdly, its due development below as well as above; and fourthly, its not being weak in any part—for without this, a back large in volume may be rendered useless by being nipped at some particular part, often being so just at the junction with the back-ribs, or with the couples. The neck is attached to the front of the chest, and the tail to the back of the pelvis; so that altogether these parts form one continuous bony chain. It is supposed by many that the tail should be very fine and thin; and I am inclined to believe that the terminal bones should be, in order to show good breeding; but the root may be as strong and powerful as possible.

THE HIND-QUARTER is the main element of progression, and upon it in a great measure depend the speed and power of the greyhound. As in all other cases, size is power; and the greater the length and size of the hind-quarter, so will be the power of propulsion. This length is variously displayed: sometimes the hind-leg being long, but straight; whilst in others it is more or less bent at two places—the stifle and hock. It will generally be observed that when the part of the leg below the hock is comparatively short, the bones above that part are bent at the stifle and the whole hind-

quarter is long, without raising the back from the ground, as would be the case with the same length of limb in a more straight form. As far as my observation goes, the bent hind-quarter is the more favourable form; but I have seen many good dogs with very straight stifles, and there can be no reason why these should not serve the purpose of propulsion as well as the bent ones. But though they can propel as well, and perhaps even better under some circumstances, they are quite useless unless they are accompanied by a low fore-quarter; for if otherwise, the fore-leg is too long in proportion, and the power of working and killing is at a very low ebb.

Two essentials are required, as already shown—viz., speed and working power. Now, speed may be given from length of hind-quarter, whether that length is usually in an extended or in a bent form, because when in action they both assume the same condition, and are then precisely similar the one to the other; but the working power is deficient if there is the *usual* accompaniment of the straight hind-quarter—viz., a long fore-leg. It will be evident that if the hind-quarter is straight, and the fore-leg is properly proportioned—that is to say, short enough for the working powers—the fore-quarter will appear very low, and the hips will stand up far above the shoulder. Now, if this formation coexists with the straight hind-leg, all may be in good proportion; but if not, it seldom happens that the dog can stoop to reach his hare without spoiling his stride. Nevertheless, a remarkable exception is sometimes seen, in which there is great working and killing power displayed with a high shoulder and long fore-legs. This, however, is contrary to rule; and in selecting a good shape, no experienced courser would take such a formation without a practical proof of its efficiency in that particular instance. Next to the length of limb, the due development of the joints is of great importance; the stifle-joints ought to be strong and broad, and the bony processes powerful and large. The hocks, also, should be long and powerful, and well separated from the leg-bone, by that thin double layer of skin which may be felt, and almost seen through. The muscles are divided into two large masses, the upper thigh, which is scarcely to be made out without the touch, being, as it were, buried in the body and flank; and the lower thigh, which is much more distinct, and of very great importance to the powers of galloping. This lower thigh is a very desirable point, if well developed; and in making a selection for breeding, its large size should be especially insisted upon. Good hind-feet, again, are necessary, but I do not like them too round and cat-like; at the same time, a long flat foot is opposed to high speed, and also prevents a due hold being taken of the ground. Wherever there is this long, flat, and broken-down foot, I should not look either for high speed or for the power of continuing the efforts of the greyhound; there is a want of that elasticity and springiness which characterize the movements of this graceful animal, and he goes dull and dead instead of being animated and ready for any exertion.

The Fore-quarter is the complement to the hind-quarter, and can do nothing until set in motion by that part of the animal economy; but, in spite of this secondary part in the locomotive department, it is not less important than the primary cause of motion, because, though not originating it, it can and does neutralize the efforts of the hind-quarter if not calculated to carry them out. The great purpose of the fore-quarter is to enable the animal to take advantage of the propulsion given by the vigorous contraction of the hind one, and thus to carry the animal on in the intervals of the strokes. If, therefore, the fore-quarter is dull, heavy, and incapable of extension, the stroke is broken and suspended, and the pace is reduced accordingly. But besides this purpose, in which the fore-quarter of the racehorse bears a similar part, that of the greyhound is also used in stopping the speed, and turning the body to the right or left, when the hare makes one of those turns which she delights in. Here the shoulder requires to be pliable yet strong, and there must be considerable play in all its parts, or it will give way in the violent effort made to change the direction of the speed. The outward formation for these purposes is well known and recognised by all in its general principles, though there may be a difference of opinion as to its details.

Everyone is agreed that the line through the shoulder-blade should be oblique, because that gives, in the first place, greater absolute length of blade; and in the second, it gives greater power over the arm, so that it may be protruded further, and with greater force than is the case with a short and upright blade. This will be made clear in the chapter treating of the structure of the dog; but it is acknowledged as a fact, that such oblique shoulders conduce to that conjunction of speed and working power which is desired. At the same time, I think I have seen so many cases of upright shoulders united with great pace and cleverness, that the rule is by no means an absolute one. But one rule is, I think, of that nature—viz., that where there are confined shoulders not acting with any liberty, but glued in their places, then the speed is not good, and the working power is absolutely null. With good sloping shoulder-blades there is almost always combined a formation which is of the greatest consequence, and that is a long upper arm—that is to say, a long bone intervening between the shoulder-blade and the elbow. This length of arm generally coincides with good length from the hip to the hock; and when that quarter is bent as I have already described, the oblique shoulder-blade, long upper arm, and low elbow, usually accompany it; in most cases, also, there is a knee close to the ground, and thus the fore and hind quarters agree in formation, and will assuredly act together. When these points are combined, they make a perfect fore-quarter, and only want a strong useful foot, with a thick horny sole, to complete the requisites. As with the hind-foot, so with this. I am not fond of the very upright, small, and round foot; such are always drawing their nails, though they are certainly well suited for fine turf; but on fallows, or rough ground of any kind, the strong and moderately-flat foot is the more useful kind. The knuckles ought to be strong and well up, but the dog should not be too much on his toes; a spreading foot, however, with a thin sole devoid of horn, will never stand work, and should on that account be avoided.

THE COLOUR is one of those points in the greyhound which has been most disputed by different judges of his merits; one party considering it of the greatest importance, while the other decides that "a good dog, like a good horse, cannot be of a bad colour." With most people there is more or less of prejudice in this matter, and I am not perhaps exempt from this failing, when I own my leaning is to blacks and reds. This leaning, however, is not entirely guided by the eye; because it will be found that a large proportion of the winners in "The Coursing Calendar" are of one or other of those colours. Indeed my belief is, that all the colours exhibited by the greyhound are to be traced to them, and that when united with white (the result of domestication) they will produce any of the many other shades which appear in the lists. Thus, by ringing the changes of black, red, and white, every shade will be produced, as shown in the following table:—

THE MIXTURE OF	RESULT.
Black and red, No. 1.	Red, with black muzzle.
Do. do. No. 2.	Red Brindle.
Do. do. No. 3.	Black and tan.
Black and white.	Blue.
Red and white.	Fawn or cream.
Black, red & white, No. 1	Blue-fawn.
Do. do. do. No. 2	Fawn-brindle.
Do. do. do. No. 3	Blue-brindle.

These colours only result when they are mixed together in the coat generally; for when that is not the case the dog is patched with these colours in blotches, either of colour on a white ground, or of white on a coloured ground; and I am quite satisfied that these several hues result from an admixture of the blood of those greyhounds which have these colours in their pedigree-tables. Wherever the colour is confined to one only for some generations, the progeny will almost always be the same, and the whole litter will resemble one another in that respect; but when all colours of the rainbow are met with, it is impossible to guess at the probable colours of the expected offspring.

From the above table it may be gathered that wherever black is the prevailing colour, you will generally have blue also, if combined with any blood containing much white, as in the case of Mr. Campbell's dogs, which were all black, white, or blue, or a

mixture of two of these; and the same may be said of fawn, as a result of breeding from red united with white; also of brindle as occurring in a mixture of the various principal colours. This last is often thought to be *sui generis;* but it is nothing more than the consequence of the mixture of colours, and is seen in all the domestic animals but the horse where there is a variety of colour—as in the cow, the pig, the dog, and the cat. In the horse the mixture of colours is shown in the roan shade, and not in a brindle; though in some breeds there is a near approach to it, as in the Norman cream-coloured and dun horses which have a black stripe down the back, and some bars generally over the shoulder and down the arm. Still the true brindle never appears in the horse, but piebald, skewbald, and spotted horses in every other shade are not uncommon. No reason for this exception can be given; but that such is the fact cannot be disputed.

We may, from the above examination as to the causes of the varieties of colour, therefore conclude that black and red are the original shades, and that all others are caused by their mixture, or by the mingling of one or both with white, which is the type and badge of domesticity. Now as this badge is not advantageous to the greyhound, we may, I think, reasonably discard it when possible, or, at all events, when it is easy to do so, and accept the pure colours in preference. By many experienced breeders it is thought that shape and performance follow the colour; and that, in picking a puppy, it ought to be selected by its near approach to that colour which its best ancestor showed. Thus, supposing a litter of whelps to be black, red, and brindled, if the dam or sire, or anyone of their progenitors, was particularly celebrated, then that puppy should be selected which most nearly resembled him or her *in colour*. This rule I have seen tried in numberless instances, but I never saw that it led to any good results; on the contrary, as with most other rules in the choice of whelps, I believe it only leads to dependence on a rotten reed.

The Coat is the last point in the conformation of the greyhound which will be here considered; and I believe it to be one of no consequence whatever. There is, however, one kind of coat which is radically bad; and that is a woolly fur, rather than hair, which, though short, has no gloss on it, and which gets wet on the slightest amount of rain. This is a very bad defence against the weather, and is a mark of weakness of constitution, which would always make me reject its wearer. In all other respects I am careless of the coat; and I regard coarse hair and thin hair as alike indicative only of particular breeds, equally good for all purposes. Many of our best breeds are very coarse in the hair, and often show a goodly brush in the tail, which, however, should, if hairy, be only fan-like, and not like the fox's brush, hairy all round. Some of the best Scotch blood have a cross of the old rough greyhound, but they seldom show the rough hair, which soon disappears in crossing with the smooth greyhound; though again it occasionally peeps out in a single puppy or two, in a litter far removed from the original strain. It is, I fancy, rather desirable than otherwise; but my experience of this cross is too slight to warrant a decided opinion. Most of the best modern greyhounds are well covered with hair; and the fancy for bare thighs and cheeks is well-nigh out of date. The celebrated "Canaradzo" strain have all been remarkable for fine short silky hair, but without bare patches.

Sect. 4.—Best Mode of Procuring Greyhounds.

There are two ways of obtaining a kennel of greyhounds; one of which consists in purchasing, the other in setting to work to breed one. To the former mode there are many objections, not the least of which is, that few people sell what they believe to be good; and as they have better opportunities of trial than the purchaser, they are more likely to know than he is. It is very seldom that a *good* kennel of greyhounds is to be disposed of entire; few coursers are disgusted with the sport while success attends them, and even if they sell while in the heyday of their prosperity, a change in the management upsets all calculation, and the previously good runner turns out a loser instead. Of this many examples might be cited, not the least remarkable of which might be found

in a former season in Lancashire, where a very celebrated and victorious kennel changed hands, and the cracks, although given into the management of a very successful trainer, were put down without difficulty at the Waterloo meeting. On the other hand, this change is sometimes advantageous, as in the case of Mortality, which changed hands four times before she could come out with anything like credit, and then beat one of her former kennel companions supposed to be vastly superior to her. But, generally, it may be said that purchase is a bad speculation; and even when the whole kennel is *bonâ fide* to be disposed of, the young courser is usually supplanted by the old hand, who is possessed of information obtained from good quarters, and therefore to be relied on. In such a sale only the external form can be studied, and this is seldom to be depended on as a certain guide; action is the main reliance for choice at the puppy-age, and in a loose box, or in an auctioneer's yard, none can be seen. Some good purchases have, however, been made in this way; as, for instance, Mockingbird and Movement, into and out of a celebrated kennel; and Mr. Randell's celebrated bitch, Rival, purchased at Sir H. G. Gore's sale for about 15*l.* At that sale also occurred a curious instance of the little faith to be put upon information as to the relative value of puppies. Before the sale, a person who had had good opportunities of judging of the respective merits of the puppies, was asked for his opinion by Mr. Randell, and he advised him by all means to buy one by Magician out of Shade; and, acting upon that advice, he did buy her at about the same price as Rival, which bitch he selected on his own judgment. Here, then, was a bitch by a Waterloo Cup winner out of a Waterloo Cup winner, and recommended by a good judge, who had seen her in her play at various times, yet she proved utterly useless, while the comparatively disregarded companion turned out certainly one of the best, if not the very best, greyhound of her year.

Of late, the breeding of greyhounds for sale has been entered on rather largely, and so far the result has proved very profitable; for, in addition to the home demand, large numbers of well-bred youngsters are now purchased for shipment to Australia, where hares have been introduced, and coursing has grown rapidly in public favour. To make such sales profitable, however, by selling the produce at high prices, a great outlay is requisite, in order to obtain brood bitches of the best running blood. Thus Mr. W. H. Clark, who has an annual sale in London, at Aldridge's Repository, gave nearly 800 guineas for four bitches for breeding purposes. He paid 200 guineas to Mr. Carruthers for Cataclysm, and bought Cymbal, Cripple, and Charm, at Mr. Lister's sale in December 1874, for 250, 200, and 120 guineas respectively. At the same sale some extraordinary prices were realized for saplings — a bitch by Magnano out of Chameleon having been sold for 105 guineas, while four of the same litter averaged 40 guineas each. Four others, by Improver out of Charming May, averaged 55 guineas, and seven by Liberty out of Cymbal produced an average of 35 guineas. As may be imagined, very large sums are given for animals that have shown good public form, and are thought likely to win the Waterloo Cup. Peasant Boy, for instance, was bought for 500*l.*; and, had Lord Lurgan been disposed, he could easily have found a purchaser for Master M'Grath at 1000*l.* Nowadays 100*l.* to 200*l.* are very common prices; and for years in succession such sums were paid by Mr. Spinks, until in 1870 he at length succeeded in winning the coveted prize with a bitch (Sea Cove) which he had bought for 100*l.* Far less satisfactory was a purchase of Mr. Hemming's. He gave 300*l.* for Winsome Lassie II., who had run forward for the Lurgan St. Leger of 1873, and in July 1875 she was knocked down for 5 guineas at a sale by auction.

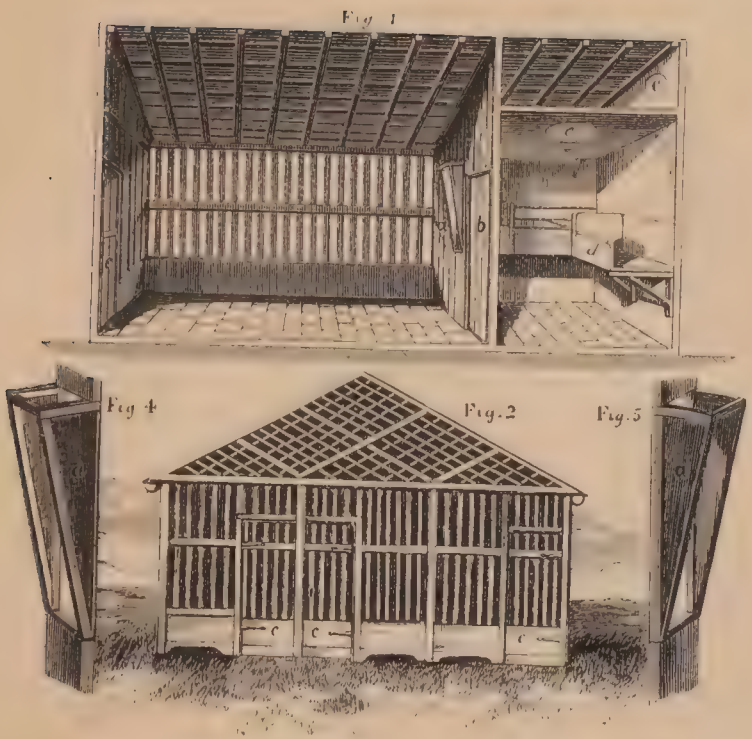
Such is the lottery in purchasing; and the same might be said of breeding; but then the outlay is not so great, and the annoyance is lessened by the absence of any specific sum as spent upon a worthless brute. In case, however, of the necessity for a purchase, it is much better to buy a brace or two of whelps at weaning-time than to buy puppies of the age of ten or twelve months, for the choice is not worth much at the early period I have named, and the good judge will often allow the best puppies in a litter to pass into

strange hands without intending it. Before three months there is very little choice; and if only the legs and feet are good, and there is no rupture or other malformation, I should care little as to the pick of the litter at weaning-time. There are, of course, some which are unhealthy and half-starved; but I do not speak of the last pick, but of the difference between the best two or three in the litter. Let the young courser, therefore, if he must buy, determine upon the blood he requires, and then let him purchase a brace or two of whelps of that blood, getting some friend to pick them for him out of the litter, but contenting himself with the second or third pick as quite equal to the first, in all human probability. These whelps he may proceed to rear upon the principles which will be found hereafter detailed. In the meantime, and while they are coming on, there will be a season to spare, and during that season the tyro should experimentalize on a brace of greyhounds of average goodness, which he may buy for 5*l.* apiece, or often obtain as a gift. With these he may appear in the private coursing-field, or on those semi-public days which are so common in every coursing neighbourhood, and where he may pit them against equally inferior dogs as often as he likes. Let him bestow every pains upon them, and try all he knows, or his trainer, if he has one—for it will require plenty of good management to make them do more in his hands than they did before in the hands of their previous master. But they will serve to give him an insight into the peculiarities of the animals, and he will learn to know what to avoid in his treatment, and what is injurious to them, if not always what is the most successful kind of management. In this way I have known gifts turned into winning dogs; and low-priced ones, after being discarded from large kennels, have been able to do wonders, comparatively speaking, when treated in a different way in a smaller and more limited stud. My advice, therefore, would be to all young coursers, not to attempt to do too much at first, but to purchase or beg a brace or two of inferior greyhounds, and make the most of them for the first season; and in the meantime, to breed or purchase a few whelps, which, by the beginning of the second season, when practice has fitted the trainer for their management, will be ready to take the field with some prospect of success.

Sect. 5.—Kennels, and Kennel Management.

Kennels for greyhounds should be constructed on a very different plan to those already described for foxhounds or harriers. For the more delicate greyhound, which is clothed on exposure to the cold, and otherwise protected, a covered court is always desirable; and without it, he will not leave his lodging-room in bad weather to empty himself, but will soil that apartment in a way which is certainly not conducive to his health. Besides this, more than four or five greyhounds should never be in one division, as they are so highly fed that they are always fighting and laming one another; and they are also less healthy than when in smaller numbers.

The annexed plans and elevation will show all that is required for from twelve to sixteen running dogs, which is quite as great a number as ought to be kept together at any one time. These kennels should be from 25 to 35 feet long, by 24 or 25 feet wide; and the whole parallelogram should be roofed-in either with slate, or boarding, or felt; but whatever material is used should be whitewashed, or painted of a light colour, on account of the heat absorbed by the natural colour of the slates, or by the dark colour of pitch, as usually applied to felt. This area should be subdivided longitudinally into three kennels, each 8 feet wide; and these again should be divided off into an inner sleeping-room, and an outer yard, with a door (*figs.* 1 and 3, *b*) and window (*figs.* 1, 4, and 5, *a a a*) between, and a ventilator in the ceiling and outer-wall, as shown in the plan at *e e*. A bed (*d*) should be raised about 1 foot 6 inches from the floor, and the sides, back, and front should be lined with boarding about 9 inches high. If the dogs are quarrelsome, each should have a separate compartment boarded off, about 18 inches high, as shown at *f f f f*, *fig.* 3, and at *d*, *fig.* 1. This will enable any one of four dogs to have a compartment to himself, even if he is continually chased about, because he will always have an empty one to fly to; and this is sometimes of



PLAN OF GREYHOUND KENNELS.

great consequence, as it frequently happens that a cowardly dog is driven off the bed, and obliged to lie on the floor, to the imminent danger of producing rheumatism in some one of its multifarious forms. This is the way in which kennel-lameness is often produced, and also many other varieties of chronic rheumatism. *Fig.* 1 gives a perspective view of the interior of one division of the kennel, adapted for four quarrelsome dogs or bitches. It shows the outer-yard on the left, with its doors (*c* and *b*), and the sleeping-room on the right, with its ventilating window (*a*), also shown enlarged in *figs.* 4 and 5, and its ventilators in the ceiling and end-wall (*e e*). The beds, partitioned off, are shown at *d*. *Fig.* 2 shows the elevation of the end of the whole kennels, and *fig.* 3 the ground-plan with the course of the drains. If a greater number of greyhounds are kept than this kennel will accommodate, it is better to provide for them elsewhere in a similar way, or to put them for the time in loose boxes or outbuildings of any form. The walls should be of good hard-burnt bricks—not porous, so as to absorb the secretions; and are better covered with a layer of cement. The floor should be laid in glazed tiles, embedded in a layer of cement upon concrete, composed of cinders or clinkers mixed with gravel and lime in equal proportions. This sets very hard, but it should have on it a layer of cement, just thick enough to hold the tiles securely in their places, and prevent the water from insinuating itself into the crevices between them.

The Kennel Management is mainly dependent upon cleanliness and regularity for success. Every kennel should be scrupulously clean, and should be washed down and carefully mopped dry once a day. This should be done while the inmates are at exercise, and it will be nearly dry when they return. A layer of sawdust should always be on the floor in cold weather, but in the summer it is cleaner and better without it. Some use straw, but I think sawdust better and more easily renewed and removed. For the beds, good straw is the best, and in the heat of summer nothing at all; greyhounds will then far rather sleep upon bare boards than upon the straw, and will, if their beds are full of it, sleep upon the floor in preference. Deal shavings are said to be obnoxious to fleas, but I never found them of much use. The feeding need not be here described, as it will be given more in detail at the proper time. Water should always be kept in galvanized iron vessels, fixed at about a foot from the ground to prevent it being soiled; and it should be regularly boiled when the dogs are in training, to prevent change of water producing injurious consequences. In all ordinary weather the door between the yard and the sleeping-room (*figs.* 1 and 3, *b b b b*) may be left ajar, for which purpose a couple of loose tiles are very useful, one inside and the other out; but in severe weather it must be closed. Some cut a hole in the door, and hang a piece of carpet against it; but this is not a good plan, because in severe weather it allows the wind to penetrate to too great a degree for the health of the greyhound.

CHAPTER III.

VARIETIES OF THE MODERN GREYHOUND.

Sect. 1.—The Newmarket Greyhound.

This variety stands at the head of the ist as the probable root of all our nodern subdivisions. It is well known hat the greyhound has been used in ublic at Newmarket longer than elsewhere, and that the greyhounds running here, being considered as of superior quality, have been eagerly sought after throughout the length and breadth of the land. Pedigrees almost always end in some dog or bitch said to have come from a kennel celebrated at Newmarket, showing either that this breed was superior to all others, or else that it was supposed to be so. The characteristics, therefore, of this dog, are really those

which are generally most highly prized, as shown by the avidity which has always been displayed to obtain the breed, which, until late years, was very difficult to procure. In the days of Lord Orford and Lord Rivers, no money could procure the best blood of their kennels, and their inferior drafts only were obtained, and often these were not to be had without great difficulty and favouritism. Since the time, however, of Lord Rivers's final sale, when his blood became generally dispersed, Captain Daintree first began the system of throwing open his best blood to the public at a fixed price; and his King Cob, with Mr. Fyson's Fantail, were advertised at 5*l.* 5*s.*, as is now so commonly done. The consequence has been, that any person who can procure a bitch, and has the command of five or ten guineas, is enabled to obtain as good blood as the highest nobleman in the land, and can compete on favourable terms in any company of coursers, at least as far as his breed of greyhounds is concerned. The characteristics of the true Newmarket greyhounds are therefore those of the most racing-like dog, and are the result of a long selection from parents which have been successful for many years past, over ground which is not so severe as to hold pace in abeyance, nor yet so confined as to make pace the only criterion. This was formerly more true of the ground at Newmarket than at present, as its character has been much altered by the encroachments of the railway upon the best part of it.

The Newmarket greyhound, then, is a racing-like, speedy animal, possessed of as much stoutness as possible in combination with high speed. His head and neck are of the most approved form, but perhaps a little too elegant and light to be thoroughly efficient—that is to say, that, according to my ideas, there is scarcely room for a brain of sufficient size to form a good centre of the nervous system. The chest is very deep, and of good volume, though often rather flat-sided; back scarcely so stout as it should be; thighs and hocks extremely well bent, and strong; shoulders slanting, light, yet muscular, and very movable; fore-legs straight, and feet good. In action these dogs are light and fast gallopers, and being generally of good size, they are able to beat most others to the hare. They are seldom very first-rate workers, being too large and fast to compete with slower and smaller dogs; but many of them have extraordinary powers of coming round with their hares, considering their speed and size. In effecting this purpose, most fast dogs of this breed turn by running a segment of a circle without stopping themselves and starting afresh; and in doing this, they maintain their high speed in a wonderful manner; but this mode of working requires a very fast and racing hare to show itself; for with a short-running or weak hare, these round-turning dogs are all abroad, and seem unable and even unwilling to exert themselves. With, however, a fast hare they show themselves to great perfection; and if they let in a closer worker, they go by him in the stretches again and again. In moderately short courses, therefore, with fast hares, they beat everything not so fast as themselves; but in severe courses with hares which will not allow themselves to be killed, they exhaust their powers by their efforts, and then often suffer defeat by a dog which would perhaps never have reached the hare in question but for them. This is one of the lotteries of coursing which make the attainment of success so much more uncertain in that pursuit than in any other; for as you can never tell beforehand either the length of the course or the nature of the hare, it is quite impossible to be always prepared to meet the exact difficulties which will have to be surmounted. The only thing therefore to be done is to select the dog which will succeed in the greatest proportion of events out of a given number; and then, I think, the Newmarket variety, as above described, will always bear the prize. I do not mean dogs such as now are used at Newmarket but such as are descended from the best blood of those kennels which were victorious in the palmy days of that celebrated locality.

The most successful of these, as sires, have been Captain Daintree's King Cob, and Mr. Fyson's Foremost and Figaro, both sons of his celebrated bitch Frederica, and close rivals while alive in getting winning stock. After the first generation, however, Figaro went far ahead of Foremost, though the latter had an excellent trial of his power at the stud, through his sons Czar, War Eagle, Wrestler, and Staymaker, to

whom many of the best bitches in the kingdom were put, while his daughters Turquoise, Wicked Eye, and several others of first-class running powers were used with an equally unsatisfactory result, Wicked Eye only producing one good litter—namely, that by Mr. Borron's Bluelight.

Contrasting most favourably with these are the descendants of Frederica's son by King Cob, from whom we trace, with various crosses of blood, the following well-known sires of comparatively recent dogs—viz., Weapon, Bedlamite (a host in himself), and his sons, Jacobite, The Wizard, Black Adder, Black Eagle, Ranter, Gipsy Prince, Gipsy Royal, and Gipsy King, with whom must be joined the celebrated bitch Riot, sister to Ranter and the Gipsies. Besides these we find also Effort, The Brewer, Regan, Rebel, Selby, Cardinal York, Picton, Mansoor, Mechanic, Windermere, Railroad, Kingwater, Ingomar, &c., all tracing back to Figaro, either through the male or female lines; so that the Foremost strain is quite eclipsed in the present day—Baron Garnoch in Scotland, and the son of "the little Irish terrier," Mr. Blue Hat, in Ireland, with Railroad and Sea Gull in England, being the chief public stallions containing any infusion of that blood that have been used during the last fifteen years. As a further confirmation of the value of the Figaro strain, it should not be forgotten that there are several collateral descendants from King Cob of nearly equal value, as, for instance, Baron, Ladylike, and Sam, from the last of whom sprang David and Patent, with their relations Gabriel, Colchicum, Lapidist, and Little Wonder; and the winners of four consecutive Waterloo Cups — viz., Lord Lurgan's Master M'Grath and Mr. Spinks's Sea Cove—each had three several strains of Figaro blood recombined after crossing out. A large proportion of the stallions of the present day may be traced to King Cob, and chiefly through Figaro, than which it is impossible to discover a more convincing proof of the general opinion in its favour; and though the pure Newmarket blood of Foremost and King Cob is now not to be met with, yet it prevails so extensively when mixed with the Lancashire, Scotch, and Yorkshire varieties, that it must not be forgotten.

Sect. 2.—The Wiltshire Greyhound.

The old Wiltshire greyhound is now almost or quite extinct, even the private coursers of that district having introduced crosses with the Newmarket or Lancashire dogs. As formerly existing in the kennels of Dr. Scott and other local celebrities, the Wiltshire dog showed a small, compact, and wiry frame, well suited to the long courses which were more often met with in former days than now, when small plantations have been formed expressly for the purpose of affording homes for the hares. He could not race with the faster greyhounds of Newmarket, Lancashire, or Yorkshire, but with a strong, stout-running hare he could often outwork them; and in this way Little Vic, Alacrity, and Seidlitz achieved their successes. At present, however, it is useless to allude further to this variety.

Sect. 3.—The Lancashire Greyhound.

The flats of Lancashire which are used for coursing are nearly all reclaimed land composed of perfectly level plains intersected by ditches; the soil is peaty, and a great part of it is cultivated by the plough; hence the greyhounds for this country must be of fair size and strong; and as the ditches which intersect the fields, for the purpose of draining them, are rather numerous, the dogs must be possessed of sufficient tact and cleverness to avoid mistakes at those impediments to the course. The soil is very dead and non-elastic, from the presence of the peat either at the surface or close beneath it, and the kind of gallop which is the most telling on it is rather a longer one than that which is the best suited to sound turf or a sandy soil. From the absence of hills also, the faculty of climbing them is not called into play, and consequently there is no necessity for that formation which enables the greyhound to surmount them. Speed, therefore, is the chief element of success; and in the soft soil of the reclaimed land many a dog is able to stop himself, who would be a very wide runner on the downs of Wiltshire, the sound land of Yorkshire, or the lowlands of Scotland. It must not, however, be supposed that stoutness is not required on this kind of ground, for, on the contrary, it will be seen by those who attend the

Lytham and Altcar meetings, that many of the courses are of great length and severity; and, on account of the want of elasticity of the soil, they are of a most distressing character. Indeed, when a good Lytham or Altcar hare is able to stand before a brace of greyhounds, she leads them such a dance as is seldom witnessed elsewhere, because, having often no home, she is obliged to persevere till she shakes them entirely off by running them to a stand-still. Nevertheless, greyhounds run through more seasons in that country than elsewhere, because they are seldom lamed, there being no flints or fences to do any damage; and as nothing makes a dog cunning so soon as the running him when in pain, so the absence of this condition insures his going on without the appearance of any lurching propensity. With all these advantages in his favour, it has resulted that the pure Lancashire greyhound has not been improved to the same extent as his Newmarket rival. Just as we often see the best natural soils in the worst state of artificial cultivation, so the greyhound which has the easiest task, and is the least tried by adverse circumstances, is really a worse animal in the long run than his more hardly-used antagonist. It must be remarked, however, that a dog of any of these breeds or strains in a state of purity is scarcely to be found.

In shape and make the old Lancashire greyhound bore a very close resemblance to the Newmarket dog, but did not show such high breeding in any of those points which are considered signs of that quality; the head was not so lean, and the jaw was coarser; there was even less development of brain than in the Newmarket greyhound, but the neck was shorter and thicker, though still long enough for the purposes to which it was applied. In general size he was, perhaps, a little above the standard of Newmarket, some of the most celebrated dogs having been 28 inches high and 70 lb. in weight; as, for instance, Tyrant, Emperor, Earwig, Priam, and Sandy. Most of the Lancashire greyhounds had a very long stride; and I am inclined to believe that this is a very important feature in their conformation, since, from the nature of the soil, it is not well adapted for those quick short strokes which are often successful on sound and short turf. Nevertheless, a good Newmarket greyhound, *when used to the ditches*, has generally succeeded in carrying off the Lancashire prizes, and that blood has latterly been extensively introduced by the Altcar and Lytham coursers, to cross with the local strains. When, however, a really good specimen of the old Lancashire greyhound has made an appearance there, nothing has been able to come near it; and the wonderful performances of Cerito will long be remembered in that neighbourhood. This bitch was entirely of Lancashire blood, and was exactly suited to the ground she won her triumphs on. Her stride was enormous; consequently she was not successful upon hard ground like that of Amesbury and Market Weighton.

But, putting the exceptional case of Cerito on one side, there were during the twelve years between 1843 and 1855 four greyhounds of the true Lancashire breed victorious, whilst the true Newmarket succeeded only twice, in the Waterloo Cup. Again, a cross of the latter breed with the Scotch won the much-coveted prize once, in the person of Hughie Graham; against the same feat on the part of the combination of Newmarket and Lancashire in Sackcloth, and the Lancashire and Scotch in Judge; so that it stands thus:—Lancashire, 7; Newmarket, 2; Lancashire and Scotch, 1; Lancashire and Newmarket, 1; and Newmarket and Scotch, 1: total, 12. In the runners-up during the same period there were, however, only four Lancashire dogs and one Newmarket, the remaining seven being made up of five single specimens of the various crosses and two Scotch greyhounds, Larriston and Scotland Yet. It will be seen that the former great superiority of this breed on its own ground was not maintained in subsequent years, and that others had, with the single exception of Cerito, quite as good a chance from 1847 to 1855. Still, the Lancashire blood is more fitted for its own plains than for other and more hilly countries, and consequently it was not often that its votaries were tempted to try their luck elsewhere. Sometimes, however, a good dog of this breed was successful on other ground, and the running of Sackcloth in Wiltshire will not soon be forgotten. It may be said that he was partly Newmarket: and certainly

such was the case; but Lancaster could lay claim to three-fourths of the honour, he being only one-fourth Newmarket blood. Mr. Lister likewise has run well both at Ashdown and Amesbury, but his Chloe, Cock Robin, &c., only possessed one half or less of the old Lancashire blood exhibited in Judge, the sire of Mr. Lister's celebrated bitch. Most of the old Lancashire greyhounds were descended from very old blood—that is to say, blood which has been bred in-and-in, though not too closely, yet in the same families; and the consequence is that it tells very much in those dogs of which it composes a part. In this respect it resembles the Newmarket, and when the two are combined it is difficult to say which will predominate, though, as far as my observation goes, I am inclined to think the Lancashire has the superiority in persistence.

During the following fifteen years, 1855—70, crossing with other strains has been the rule rather than the exception in this district, and indeed few stallions of pure Lancashire blood have been at the command of the breeder —including Judge, Sunbeam, and Skyrocket. Judge and Skyrocket have no doubt been used with much success, but their successful progeny have chiefly been crosses with Scotch, Yorkshire, and Newmarket bitches, more or less pure. Thus, comparing the Waterloo winners of these fifteen years with those I have previously alluded to, between 1843 and 1855, we find, though this important event has still been won or run up for by Maid of the Mill, Meg, Judge, Sunbeam, and Sea Rock, all nearly pure Lancashire greyhounds—while the following may be considered as crosses between that breed and the Scotch or North of England (Yorkshire) strains, viz., Protest, Neville, Canaradzo, Chloe, King Death, Meg, Deacon, Sampler, Bowfell, and King Tom—three latter winners, Brigadier, Master M'Grath, and Sea Cove, exhibit a great preponderance of Newmarket blood combined with Lancashire. The Irish dog, as well as Brigadier and Sea Cove, have each four strains of King Cob blood; Lord Lurgan's combining them with four strains of Kouli Khan, as well as with Emperor and Waterloo, while Mr. Spinks's bitch, descended also from King Cob through four lines, is also combined twice with Waterloo, twice with Lord Douglas's Drift and Dux, and twice with the old Lancashire blood of Bugle, through Mr. Borron's Bluelight. It will thus be seen that our best performers of late years have combined the old Newmarket, Lancashire, and Scotch strains in nearly equal proportions, with a dash of the Yorkshire.

Sect. 4.—The Yorkshire Greyhound.

The greyhound which I have always distinguished by this name might, perhaps, be more correctly called the North of England dog, as he is equally distributed over Yorkshire and the border counties. In pace he has always been quite in the front rank; indeed, a slow north-country dog is quite exceptional. At present, however, as far as I know, there is no remnant of the old pure strains, which have been so mixed with Lancashire, Newmarket, and Scotch as to be entirely lost. Twenty-five years ago the most celebrated Yorkshire dogs were Velox, Assault, and Rattler, which were descended from Charles XII., and these even were of mixed Newmarket and local strains. Now, as I before remarked, there are none of the latter approaching to purity, and therefore it is needless to allude to them further.

Sect 5.—The Smooth Scotch Greyhound.

This variety, like the Yorkshire dog, is, in its original purity, almost extinct, having been crossed and recrossed with those of Newmarket and Lancashire. Commencing some thirty years ago, we find that the founder of many successful strains through Sir James Boswell's Jason (I allude to Mr. Sharpe's Monarch) was almost wholly English; while Lord Eglinton's Waterloo was half English, being a son of Mr. De Burgh's Exotic, an importation from the south. Lord Eglinton's Rufus also was in great measure of Lancashire blood, being a grandson of Ball's Bugle. But Dr. Brown's dogs Sport and Chance, were, I believe, of pure Scotch blood; and Mr. A. Graham's rough breed, though much crossed with the blood of Bugle, were otherwise entirely Scotch. All these various sorts differ from each other in many most essential particulars, and certainly they might be split up into sections quite as easily

as the Newmarket, Lancashire, and Yorkshire greyhound, which resemble one another as much as the descendants of Mr. Sharpe's Monarch, Mr. A. Graham's rough breed, or Dr. Brown's Sport. But still, though differing in some points, they all partook of some characteristics in common, not the least of which was their early maturity.

Puppy stakes have long been a prominent feature in the Scotch courser's card, and consequently he has bred a good deal for that purpose. Now, to insure early maturity, there must be not only a frame which is rapidly set and furnished, but there should be a disposition to acquire tact and cleverness without much practice—of which there cannot be any great amount in the case of puppies engaged to appear in those public stakes that are run in October and November. From these causes it has resulted, that speed coming first in the estimate, as it ought always to do, early maturity and tact have next been considered in the scale; and the sire whose puppies have come out victorious in the produce-stakes has been overwhelmed with applications for his services. These peculiarities have been very apparent in the Jasons, the Heather Jocks, and Mr. A. Graham's blood; while the descendants of Waterloo and Sport, with many others of the old Scotch blood, have not stood that test so well, and have consequently been rejected. The Jasons were particularly remarkable for early maturity in working power, often seeming to run their second or third hares as cleverly as they do after long experience. This was also the case with the Heather Jocks, as shown in Rufus and his sister Blackbird. Quickness and cleverness were their *forte*, together with a great degree of hardihood of constitution and power of bearing punishment, though often coupled with an uncertainty of temper for which there is no accounting. Their power of stopping themselves, and getting away from their turns was quite distinct from the Newmarket sweep; and while they were nearly if not quite as fast as those dogs, they were greatly their superiors with a short-running or bad hare. With a very fast one they did not seem to me to be able to sustain so well the prolonged racing pace, either from a want of courage or of wind, or perhaps both; but when it came to a continuance of severe work, few dogs could come up to them. The stock of Sport more nearly resembled the Yorkshire strains in every respect; while the rough breed of Mr. A. Graham must have a separate consideration. Mr. Borron very successfully crossed the Scotch blood of Waterloo with the pure Lancashire in Bluelight, producing his celebrated litter composed of Beacon, Black Cloud, Bright Idea, and Bonfire, of which the first two named became the well-known stallions of those names. From a cross of the same dog with another Waterloo bitch, he also got Bright Steel, a first-class runner, but not successful at the stud. Since that era Mr. Campbell crossed back into the old Scotch blood of Lord Douglas, producing, by the union of Beacon and Scotland Yet in their litters, those wonderfully successful runners, Canaradzo, Sea Foam, Sea Pink, Coorooran, Canopy, Cazzarina, and Ivie; besides Dalgig and Bugle, which to some extent have been also renowned at the stud. These celebrated dogs alone would serve to make the Scotch strain remarkable in the eyes of coursers, especially as their successors have been still further continued—King Death, King Tom, and many others—down to the present day.

Sect. 6.—The Rough Scotch Greyhound.

Of this breed, in its pristine purity, I know nothing; but I have seen some of the greyhounds largely crossed with the blood, and exhibiting all the roughness of the original strain. Their speed seems great, but, as far as I have been able to judge, not quite first class. It is, therefore, chiefly as a means of improving the southern breeds that it has been used, and with a considerable degree of success. All those which I have met with of this blood have been light in the loin, and apparently deficient in power there. This, however, is said to be accidental, and that the best specimens were remarkably good in that point. The characteristics of this breed are great size and good speed, with considerable working power, but some little deficiency of quickness. They are not very fast from their turns, but with a straight-backed hare they show well, and are able to lie well

down, running the line of the hare, and bending with her without much apparent distress or trouble at the turns. They resemble the deerhound in external form, but differ in their power of stooping; the latter always carry their heads high, whilst the former drop it well between their fore-legs. They are very hardy, and capable of sustaining any amount of punishment, and on that account are well calculated for crossing with the more delicate south-country breeds; but, as these are now much more accustomed to bear cold and hardships than they formerly were, the use of the rough greyhound has been a good deal superseded, and it is consequently neglected by the Scotch breeders for public running.

Such are the varieties of the greyhound. The next thing to consider is the selection from them of the individuals to form the foundation of the breeding-stud.

CHAPTER IV.

BREEDING THE GREYHOUND.

Sect. 1.—Selection of Brood-Bitch.

Upon the proper choice of this primary and most important foundation of the stud will in great measure depend the after-success of her progeny. Now, on what principles should the selection be made? Or, are there any such reliable principles known? To the second question I may answer decidedly, yes; and to the first I will endeavour to afford what answer I can, in the following remarks. If the returns of coursing meetings throughout England and Scotland are carefully analysed, it will be found that in very few instances will what is called private blood be successful, and that a large proportion of winners are allied to certain well-known families. Occasionally a greyhound of a pedigree unknown to fame appears as a winner, but rarely of a large stake; and if, by great chance, such an event occurs, it will often be found that although the sire and dam may be of no repute, yet their more remote progenitors are of winning public blood. Some remarkable exceptions to this rule might be adduced, but they are so rare as to make them exceptions of that character which prove rather than disprove a rule. Thus, rule the first may be laid down—viz., that it is desirable to select a brood-bitch of good winning blood.

Next, it will be found that throughout England, Ireland, and Scotland, certain breeds are more successful than others; and the published returns in the "Calendar" will serve to indicate what they are, and show the proportion of winners to losers. We might thus twenty years ago easily have drawn the deduction, that the stock of King Cob or Bugle having for some time been more victorious than any other in Great Britain, should be selected on the principle that "like begets like," and that that blood, if selected in a brood-bitch, would most likely succeed in producing winning puppies. The selection might then have been founded upon a kind of statistical calculation; and even now such a process will, I believe, be more likely to lead to success than any other. At present, however, the young breeder may say that this information is not sufficient, since he cannot procure either of these breeds unmixed with other blood; and this is quite true; and therefore I shall proceed to show the best mode of arriving at correct conclusions as to further operations.

By an examination of the returns in the "Calendar" for the last few years, it will be seen that these breeds have been much intermixed, and that, consequently, there will be many brood-bitches to be had combining these strains. It would therefore be reasonable to select either of these crosses for a brood-bitch; and I believe they will turn out very useful in that capacity. But then comes the difficulty of finding a suitable mate; but the consideration of this point may be left to its proper place (see p. 227).

Throughout the United Kingdom, bitches descended from Bedlamite and Patent have been distinguished at the stud, while Mr. Campbell's strains have

been almost equally successful, though perhaps not so much so on the female side—Canaradzo and Coorooran having certainly been more distinguished than Canopy, Cazzarina, and Cioloja. In the south, David, combining a double strain of the blood of King Cob with that of Kouli Khan and Bugle, was the great rival of Bedlamite, for though not having got any number of greyhounds quite first-class, yet he was the sire of quite as large a proportion of winners altogether, or perhaps even more, and mostly out of second-class bitches. Effort, who united the blood of King Cob with that of Cerito and Larriston, was the contemporary stallion of David in the south; but he has not done nearly so well, possibly from being less in-bred, for in his pedigree will be found a succession of crosses, whereas that of David is in-bred once each to King Cob and Kouli Khan. His sire Larriston is, however, represented in many modern pedigrees of the highest class, and notably in that of the stallion Ewesdale; also in the pedigrees of the last two Waterloo Cup winners of the male sex.

Choice of the Individual.—Having fixed upon the strain of blood which it is desirable to select, the next thing for the breeder to consider is the choice of the individual. In the first place she should herself combine in her own person as much as possible of the following qualities, viz.:—1, stoutness; 2, speed; 3, honesty; and 4, working power. It is not likely that a bitch with all four qualities fully developed, will be procurable, but where there is a choice, I should value them in the order which I have just adopted. Stoutness I believe to reside in the whole nervous system, in combination with the muscular apparatus, for no animal can be stout without a sufficient development of the muscles of locomotion; yet the possession of large muscles does not necessitate stoutness, and, indeed, the reverse is often the case. The bitch should also be in good health, without which her progeny are never likely to be of use in the coursing field. It does not follow that she should never have been amiss, and, indeed, the example of Scotland Yet would lead one to consider well before rejecting an invalid, for she was at one time almost given up for death, having been attacked with dropsy to a serious extent.

At first sight, the breeder may think that a great winner is necessary for his purpose, and may wait a long time in the hope of procuring such an animal. Here he would no doubt find great difficulty, for most people refuse to part with their pets, and retain them in their possession, even if they do not breed from them; but, fortunately, it happens that the successful runner is not always the mother of winners; and indeed I much doubt whether she is as likely to become celebrated in this way as another and less fortunate scion of the same stock. Again let us have recourse to statistics, and let us see how many of the dams of our best greyhounds are, or have been, great public winners. In this way, by taking our best litters for some years back, it will be seen that they are generally out of average bitches, and often not coming up to that degree; as, for instance, Lord Eglinton's Frolic, dam of Black Cloud, &c.; Fudge, dam of Judge; Blackfly, dam of Ranter, Riot, &c.; Lucy, dam of Brighton, Cromwell, &c.; Tollwife; dam of Motley and Miss Hannah; Frolic, dam of Beacon and Black Cloud; Wanton, dam of David; Annoyance, dam of King Death; Curiosity, dam of Sea Cove, &c.; all, however, of winning blood, though not themselves victorious in any high degree. Again, we have seen many extraordinary public winners produce litter after litter of inferior or middling greyhounds; and even the illustrious Mocking-bird, and her immediate successor in coursing annals, the equally celebrated Riot, produced no very remarkable exception to that rule. It is true that some departures from this dictum may be adduced; as, for instance, Sackcloth, out of Cinderella; Staymaker, out of Dressmaker; Lurlie, out of Landgravine; Canaradzo and his family, out of Scotland Yet; Bedlamite and his family, out of Bessy Bedlam, &c. &c.; but still, by far the greater number of good winners are out of bitches comparatively unknown to fame. The young courser may therefore be satisfied with a bitch of good blood, even if she is not a winner, or at all events not to any great extent.

Again, it is unnecessary that the bitch chosen should be in size exactly what he requires, nor even that her shape should coincide in every particular with his ideas of excellence; but by all means let him be satisfied that she is

individually healthy, and likely to transmit that indispensable condition to her offspring. By a reference to the principles of breeding hereafter given, it will be found that the rule is not exactly that "like begets like," but that "like begets the likeness of itself or of one of its family;" and consequently, unless the whole family is good, there is no certainty as to the result. Thus, in addition to health, it is only necessary to take care that the family is such as you wish to perpetuate, and then to disregard the individual to a certain extent; at least to place the value of her particular good qualities, excepting health, below those of her immediate relations.

Many reasons may be given why animals which are great winners are less likely to produce good offspring than their more unlucky rivals; as, for instance, the following:—First, they must have been severely tested and strained, bodily and mentally, in order to arrive at success, and consequently their bodies have been rendered less fit for breeding purposes; and their mental faculties have been so highly educated as generally to lead to a degree of lurching which is too apt to be transmitted to the offspring. I am quite satisfied that the dam and sire of greyhounds ought not only to be honest, but they ought, if possible, to possess their original fire of puppyhood in an undiminished state. This, it is true, is seldom the case; but the nearer it is carried to the desired state, the more likely will the produce be to run in a true, honest, and game style. This is especially necessary in those breeds which come early to maturity, for, as they are necessarily clever by nature, they do not bear with impunity any great addition due to practice. If, therefore, the young courser can effect the purchase of a discarded little bitch of good strong frame and constitution, and belonging to a winning family of greyhounds, especially if she is of the same litter with two or three good public winners, he may content himself with the reflection that he has procured, at little cost, a brood-bitch as likely to suit his purpose as it is possible to select; and having made this choice, the next thing to be done is to decide upon the best stallion to cross her with, in order to remove her defects, and improve her excellences or beauties.

Sect. 2.—Choice of the Stallion.

Next in importance to the choice of the brood-bitch is that of the stallion to cross her with. For many reasons the bitch is first to be considered, one being that she cannot so easily be changed every year; and another, that she really impresses her nature upon the whelps more than the sire does This is a disputed point, and I myself doubt whether in shape the sire has not more effect than the dam; but in point of nervous temperament, as evinced by what is called stoutness and courage, I am satisfied that the preponderance is in favour of the bitch. Again, I think it is pretty clear that the whelps go back more to the blood of the grandam on the dam's side, than to the same ancestress on the side of the sire; so that not only is the immediate litter more affected by their dam than their sire, but their offspring also will show the same result. This, however, is very difficult of proof, and I offer it rather as an opinion founded on general observation than as proved by any facts capable of analysis; and the fact must not be overlooked that there are remarkable instances of the preponderating influence of the sire in some respects, as in the case of Bedlamite, who had bitches of all colours put to him, yet never was known to beget progeny of any other colour than black.

All this, however, is foreign to the present subject, which is that of choosing the stallion for the brood-bitch already selected. Again, I shall ask, are there any fixed and known principles upon which this selection should be made? I would that I could answer in the affirmative with any strong belief in the truth of the opinion; but alas, I am compelled to say that the more I see of breeding, the more I am convinced that we are in the dark on the subject of its mysteries. Some few guides, however, we have; but let us not delude ourselves with the idea that we have more knowledge than we can really lay claim to. The following will be found to embody all that we know on this abstruse subject which is likely to interest the breeder:—

1.—The male and female each furnish their quota towards the original germ of the offspring; but the female,

over and above this, nourishes it till it is born, and consequently may be supposed to have more influence upon its formation than the male.

2.—Natural conformation is transmitted by both parties as a general law, and likewise any acquired or accidental variation.

3.—In proportion to the purity of the breed will it be transmitted unchanged to the offspring. Thus a pure Newmarket greyhound, if put to a bitch composed of Lancashire and Scotch blood, will get stock showing much more Newmarket blood than either Lancashire or Scotch.

4.—Breeding in-and-in is not injurious to the greyhound, as may be proved both from theory and practice; indeed it appears, on the contrary, to be very advantageous in many well-marked instances which have of late years appeared in public. It should, however, not be carried beyond once in and twice out, as a general rule.

5.—As every greyhound is a compound animal, made up of a sire and dam, and also their sires and dams, so, unless there is much breeding in-and-in, the result is such that it is impossible to foretell with absolute certainly what particular result will be elicited.

6.—The first impregnation appears to produce some effect upon the next and subsequent ones. It is therefore necessary to take care that the effect of the cross in question is not neutralized by a prior and bad impregnation.

With these few rules, then, let us proceed to consider what particular cross will suit any of the above selections. It must be mentioned, however, that in the choice of a sire it is necessary to avoid any great and sudden change; that is to say, that it seldom answers to put a little, compact, short-working bitch to a great, loose, fast and wide-running dog, *unless she is of a much-crossed breed, and he is the reverse*, when the result will be that the progeny will follow his mould and very few of them will resemble the dam. If, however, they are equally cross-bred, or equally pure-bred, the progeny will be made up of incongruous materials, and, instead of taking the happy medium between the two, will be made up perhaps of large, loose, and racing hind-quarters, with strong, confined, muscular and short fore-quarters. The consequence of this is that the stride is a failure, and the animal is always overreaching himself and falling, as is so constantly seen in the coursing-field. The principle, therefore, should be to avoid too great a difference between the two. If the bitch is well-selected, and of a family as near perfection as I have pointed out to be desirable, a great contrast can never be necessary; and as there are a great many disadvantages attending upon it, it should be carefully avoided. Now, then, supposing the breeder to possess a bitch of the David breed, and he is desirous to perpetuate the kind of running peculiar to that family, I should avoid any further in-breeding, because it has already been carried to a very great extent in that blood, and I should therefore advise the selection of a stallion partaking of the same quick, fast, and merry style of working, as seen in the stock of Canaradzo, with whose descendants I fancy the blood of David would combine well. The Judges would, no doubt, do also, for we have the examples of Impératrice and her sister Glimpse at Glory, which were out of a Judge bitch by David.

It is often very difficult to obtain both dog and bitch possessing all the attributes which are desired; and where one is wanting in the bitch, it is generally the practice to look for it in the dog. Indeed, this is the usual rule in breeding; but by selecting the brood-bitch with great care it is possible to avoid the necessity. An outlay of a few pounds additional will be all that is necessary; and when this is spread over five or six years it is not felt as it is when confined to one only. It may be regarded as a settled point in breeding for public coursing, that parsimony in any department is bad economy, and in none more than in the purchase of a brood-bitch. Every year it becomes more difficult to select any particularly good strain, because all are now so much intermixed; but first-class individuals may almost always be procured, or individually belong to first-class litters.

SECT. 3.—STALLIONS.

The following is a list of the stallions lately advertised (1875) :—

Name of Dog.	Sire and Dam.	Fee.	Where Stationed.
		Gs.	
Abercrombie	Dusty Miller—Black Bess	7	Carlisle.
Admirable Crichton	Cashier—Bab at the Bowster	7	Dalkeith, N.B.
Azamat	Tullochgorum—Cygnet	10	Brighton.
Bacchanal	Cauld Kail—Bergamot	8	Rockliffe, Carlisle.
Bad Shot	Armstrong Gun—Bad Grace	5	Chorley, Lancashire.
Balchristie	Cashier—Bab at the Bowster	5	North Weald, Epping.
Barmby	Cauld Kail—Bab at the Bowster	10	Conway, North Wales.
Baronet	Royal—Buckthorn	5	Harrogate.
Belfast	Master M'Grath—Medal	5	North Weald, Epping.
Bendimere	Cauld Kail—Bergamot	15	Rockliffe, Carlisle.
Besieger	Brigadier—Baltic	4	Audlem, Cheshire.
Birdcatcher	Cock Robin—Bohemian Girl	5	Ludlow, Shropshire.
Blackburn	Lancaster—Kitty Malone	10	Blackburn.
Black Knight	Little Wonder—Gentianella	...	Ardrossan, N.B.
Blair Gowrie	Rather Improved—Tirzah	7	Carlisle.
Blue Beard	Boanerges—Bertha	5	Staines, Middlesex.
Boatswain	Cauld Kail—Bab at the Bowster	3	Market Weighton.
Boom	Armstrong Gun—Dark Rhitornella	5	Chorley, Lancashire.
Brigade Major	Bendimere—Brigade	7	Springwood, Liverpool.
British Flag	Cashier—Annie Mars	7	Newcastle-on-Tyne.
Buccaneer	Brigadier—Whisky	7	Stockport.
Cavalier	Cauld Kail—Princess Royal	10	Canonbie, N.B.
Claimant	Curiosity—Chignon	5	Idstone, Berks.
Cockie Leekie	Cauld Kail—Lady Lilliard	7	Newcastle-on Tyne.
Contango	Cashier—Bab at the Bowster	10	Dumfries, N.B.
Councillor	Prime Minister—Miss Hannah	7	Lichfield.
Countryman	Regulus—Ristori	10	Newmarket.
Crossfell	Canaradzo—Meg	8	Faringdon, Berks.
Cyclone	Cauld Kail—Lady Stormont	5	12, Eaton Row, London.
David II.	Strange Idea—Happy Home	5	Lichfield.
Dreaded Falcon	Cauld Kail—Queen Charming	10	Morpeth.
Falcon	Strange Idea—Happy Home	7	Derby.
Falkirk	Cauld Kail—Isoline	5	Brighton.
Farrier	Cavalier—Carlton	8	Bolton.
Fleetfoot	Master M'Grath—Victory	5	Maidenhead.
Flute	Banjo—Green Sleeves	5	Gainsborough.
Foam	King Death—Sea Serpent	7	Reading.
Fusee	Fusilier—Black Bess	7	Ecclefechan, N.B.
Ghillie Callum	Clansman—Spider	5	Godstone, Surrey.
Gilderoy	Crossfell—Gaudy Poll	10	Wadley, Berks.
Glenavon	Ingleton or Gaff—Wee Avon	10	Kelvedon' Essex.
Gone	Strange Idea—Gaudy Poll	5	Killiney, near Dublin.
Happy Joe	Ridley—Hawthorn	5	Charlbury, Oxon.
Harpist	Banjo—Alice	5	Lincoln.
Hockheimer	Lion's Share—Havoc	5	Bury St. Edmunds.
Hopeful Joe	Master Frederick—Hebe	7	Ballymoney, Co. Antrim.
Horizontal	Boanerges—Lady Mars	3	Choppington, Northumberland.
Howler	Patent—Bertha	5	Brighton.
Improver	Patent—Cordelia	7	Lockerbie, N.B.
Indian Chief	Regulus—Ristori	5	Newmarket.
Iona	Strange Idea—Elastic	5	Newcastle-on-Tyne.
Iron Shot	Fusilier—Hecate	10	Stanmore, Middlesex.
Jack Horner	Raglan—Tiny	5	Milton, Northampton.
Juryman	Horniblow—Hereford Lass	5	Milton, Northampton.
Kaiser	Rocket—Muscatel	5	Harrogate.
Lauderdale	Ewesdale—Spendthrift	5	Rawtenstall, Yorkshire.
Liberty	King Death—Miss Hassall II.	7	Formby, Liverpool.
Lord of Avon	Pride of Avon—Marvel	3	Strathavon, N.B.
Losing Hazard	Strange Idea—Clipper	5	Southampton.
Mackney	Banjo—My Sarah Ann	5	Peterborough.
Magnano	Cauld Kail—Isoline	15	Edmonton, Middlesex.
Marcello	Cauld Kail—Tormentor	5	Morpeth.
Master Birnie	Fusilier—Black Bess	10	Lockerbie, N.B.
Master Burleigh	Regan—Gertrude	7	Howden, Yorkshire.

SECT. 3.—STALLIONS (*continued*).

Name of Dog.	Sire and Dam.	Fee	Where Stationed.
		Gs	
Master Randell ...	Cauld Kail—Royalty	5	Chislehurst, Kent.
Maximus	Breadalbane Meg o' the Hill	5	Edmonton, Middlesex.
Mishap	Little Wonder—Maid of Clare	3	Newmarket.
Northumbrian	Boanerges—Lady Mars	3	Choppington, Northumberland,
Oscar	Racing Hopfactor—Placid	5	Carshalton, Surrey.
Patrick Grath	Master M'Grath—Pitho	7	Northallerton.
Peasant Boy	Racing Hopfactor—Placid	15	Holywell, Flintshire.
Pevensey	Boanerges—Bertha	5	Biggleswade, Beds.
Phantom	Cock Robin—Bertha	3	Beddingham, Lewes.
Premier	Tornado—Bertha	7	Biggleswade, Beds.
Pretender	Ewesdale—Peeress	7	Holywell, Flintshire.
Reginald	Little Wonder—Rebe	3	12, Eaton Row, London
Reiguing Monarch ...	Brigadier—Regal State	7	Downham Market.
Robin	Seagull—Swallow	3	Ashford, Kent
Rocketer	Peeping Tom—Rebe	10	Leinthall, Ludlow.
Royal Joseph	Brigadier—Hebe	7	Dublin.
St. Patrick	Master M'Grath—Sussex Lass	5	Lancing, Sussex.
Sam's Delight	Pat of Mullingar—Spendthrift	3	Stratford.
Sandridge	Portland—Consternation	7	Newmarket.
Scapegrace	Lord Rodney—Farringdon Grove ...	4	Rainham.
Sedan	Patent—Trovatore	5	Carshalton, Surrey.
Sir Charles	Patent—Lady Lorton	5	Weymouth.
Sir William	Dalgig—Miss Corah	7	Springwood. Liverpool.
Slate Dresser	Master M'Grath—Restless Belle ...	5	Holywell, Flintshire.
Speculation	King Death—Lively Mary	7	Kirklington, Carlisle.
Starboard	Cauld Kail—Rudiments	5	Edinburgh.
Stone Ale	Topper—Tilly	3	Stone, Stafford.
Stonehenge	Ghillie Callum—Druidess	5	12, Eaton Row, London.
Straurear	Speculation—Supplement	5	Edinburgh.
T. F. D.	Banjo—Wild Duck	5	Thorney, Peterborough.
Trustee	Agent—Blue Bell	5	Newmarket.
Tyrant	Cock Robin—Tackle	7	Penrith.
Wandering Willie ...	Speculation—Slowworm	5	Caromell, Ayrshire.
Writer	Liddington—Sixty-Two	5	Seaforth, Liverpool.

SECT. 4.—CROSS BREEDING.

BEST CROSS FOR OTHER BREEDS.—In the previous remarks I have been supposing that the brood-bitch is of one or other of the various breeds which I have selected; but it may so happen that she is of blood foreign to them all; and my observations would not then in any way apply. But it must be recollected that I have selected the Newmarket and Yorkshire blood as possessed of the most speed, which quality they share on nearly even terms with the Scotch and Lancashire, but sullied in the last case with a want of stoutness, and in the Scotch and Yorkshire with rather too great a degree of cleverness. Hence, if speed is required, I should select these breeds in the order I have named—viz., 1st, Newmarket; 2nd, Scotch; 3rd, Yorkshire; and 4th, Lancashire; always excepting from the last the descendants of Ball's Bugle, which certainly seem to differ from any other of their countrymen in possessing great stoutness and honesty, and in communicating these qualities to other breeds when mixed with them. But supposing speed, together with working power, were wanted for crossing with a south-country bitch, then I should take a combination of the Newmarket and Wiltshire, or Newmarket, Wiltshire, and Scotch, as shown in David, or his son Patent. If intended for Lancashire coursing, then I should select either a descendant of Judge or of Bluelight, including all the 'Beacon—Scotland Yet' family, the latter lot being much to be preferred, as it is composed of superior runners. Field Marshal got a considerable number of moderately good dogs for all countries, and some almost reaching the front rank, but none quite coming up to that standard; they do not generally run the line of their hares well, and they are rather inclined to rush without maintaining that even rate of fast

speed which one likes to see. No dog can be doing his best all through, if he is able to put the steam on occasionally to the extent they display; and though perhaps a dog with good tact is never thoroughly extended to the utmost, yet he ought to be doing all he can without excessive distress, and especially when at work. I have thus designated a few which may suit the owners of bitches without reference to the blood suiting, but solely founded on their qualities. One point, however, must be attended to, and that is, that if the bitch, whether of private or public blood, is very much in-bred, she will not receive the full benefit of a cross unless put to a dog of equally pure blood with herself. It is an established fact that the purest-bred parent tells the most in the offspring, whether that blood be good or bad; and consequently an inferior bitch of unmixed blood will throw whelps resembling herself to a very great extent, even if put to a very superior dog composed of blood derived from variously-crossed sources.

Bulldog Cross.—Breeders are greatly at variance as to the value of this cross, some supposing that it is of great service, and others that it mars the utility of the greyhound in various ways. One thing is quite clear—viz., that it does not diminish the speed; for some of our fastest dogs have been thus descended; as for instance, Czar, Assault, Rattler, Westwind, Fancyboy, all the Jasons, &c. My belief is, that it does not really increase this valuable quality, but that, the courage being increased, there is a greater tendency to display the utmost speed of which the dog is capable. The dogs also are more high couraged generally, and stand training better, which is a very important item; and they also bear the many accidents of the coursing-field with comparative disregard of their effects. But as there is seldom gold without an alloy, so these advantages are counterbalanced by a greater degree of mental cleverness than is always desirable; and as the puppy comes earlier to maturity, so he sooner becomes cunning and unfit for public contests. This cross, therefore, is unsuited for private running, or for those who do not care for puppy stakes, but reserve themselves for contests which only occasionally come off, such as the Waterloo Cup, or other peculiarly constituted exhibitions.

Sect. 5.—The Best Age for Breeding.

The bitch is, I think, at her best for breeding purposes in the third year; but many bitches have produced good litters as early as the second, and some as late as the tenth and eleventh. Mr. A. Graham's Screw, the Wiltshire bitches Seidlitz and Magic, and the dogs of the same district, Lopez and Egypt, were all out of two-year-old bitches; but the great bulk of our best dogs have been out of bitches three, four, or five years of age. In the sire, another year is perhaps required to bring him to his prime, though many of our best runners have been got by two-year-old sires, and some even at one year—as, for instance, Mr. Garrard's Locomotive; and the best litter by far ever got by Wiltshire Marquis were by him when only two years old. At three years old a great number of stallions have got good stock; but most of our best running dogs have been the offspring of four, five, and six-year-old stallions. It will therefore be more safe to select dogs of that age, though sometimes there are reasons for advocating the selection of a younger one, as in the case of a very old bitch; here a young dog is thought to invigorate the worn-out properties of the dam, but I know not with what effect. For myself, even in that case I should prefer a dog in his full prime to a younger and not yet fully-developed stallion.

Sect. 6.—Breeding In-and-In.

I have already made some few remarks upon this practice; but perhaps it will be desirable to return to the subject, as it is one which is of great importance. Like many other good practices, it has been shamefully abused, and carried to an extent which would and must assuredly end in failure. Lord Rivers was defeated in this way, and so have many other of our most prominent and at one time successful coursers. Mr. A. Graham's rule of twice in and once out is perhaps as strong an infusion of the same blood as can be safely tried; and most breeders think it is too strong by far. Latterly, however, the leaning has been towards this plan; and the successes

of Auchinleck, Vraye Foy, and the Curler, and their stock, followed by those of Motley, Miss Hannah, and Rival, have recalled the wonderful exploits of Harriet Wilson, Hourglass, Screw, Wonder, Sparrowhawk, and Streamer. Recent winners of the Waterloo Cup—Brigadier, Master M'Grath, Sea Cove, and Honeymoon—have all exhibited in-bred pedigrees with a proper amount of outcrosses, and I should advise the breeder to study them as given in the tables of dogs and bitches hereafter introduced. One thing is quite clear—namely, that this practice of in-breeding does not *necessarily* injure either the external form, or the stoutness, or the speed; for all the examples above quoted have a good share of those qualities. There can be no reason in nature why in-breeding should be prejudicial to the stock, because we find in many species of wild animals the rule usually followed, especially among gregarious animals, where the father often takes his own daughters, and even his daughters' daughters, to his harem. We know that it is a plan which succeeds well in some instances; and therefore, while these examples can be cited in opposition to that of man, his exceptional case should be outweighed by them. At the same time, when all that is desired can be obtained in a dog of more distant blood, I confess that I should prefer him to one too closely allied to the bitch in question. This, however, is frequently not the case, and then I should boldly adopt the plan of in-breeding two consecutive crosses; but after that it becomes a ticklish operation, as I know of no recent instance in which good has resulted from carrying the plan to any greater extent.

Sect. 7.—Best Time of the Year for Breeding.

The practice of breeding for produce or puppy-stakes has become so general, that a great deal is sacrificed to that end; and as they are run early in the autumn, it becomes of importance to obtain the puppies of good age at that time. Greyhounds take their age from the 1st of January, and therefore it is desirable to get the bitch to produce her whelps as soon after that time as possible, provided you have good dry and warm accommodation for them. Without this last precaution it is useless to attempt early rearing, as the whelps will be spoiled by the cold and wet of the winter and spring months. It is better in such a case to wait till April or May, as a well-reared late puppy is far better than a stunted and chilled early one. Bitches at eighteen months old run almost as well as at a later age, and therefore if your litter is a late one, you should choose them in preference to dogs for puppy-stakes. Puppies whelped after May, or the early part of June, can scarcely be old enough for the purpose; but they may be brought out in the spring following with good effect, though still to some disadvantage. I should therefore advise that bitches whelping early in the year should in all cases be selected when they can be procured, and that great attention should be paid to keeping them and their whelps warm and dry; thus the latter will be able to bear the exposure to the weather to the full extent which they require during the summer months, and when the winter comes on they are of good growth and strength, and may be kennelled like the other dogs. Besides these advantages, there is also this attending upon early litters—namely, that they may be entered to their game with impunity in the spring of their second year, so as to avoid the risk of doing this in the September following, at a time when the ground is hard, the weather hot, and the hares difficult to come at. It should be known that the bitch sometimes goes a few days less than her full time, and consequently it is not safe to put her to the dog before the end of the first week in November.

Sect. 8.—Management of the Brood-Bitch.

Putting to the Dog.—As soon as that most difficult point is decided on, which has been discussed in the last section and those preceding it, it must be followed up by putting those theoretical notions of the breeder into practice. In order to accomplish this, the bitch must be sent to the dog, if, as is generally the case, he is not in the same kennel with her. Now there are two modes of sending bitches across the country, one of which is much easier and cheaper than the other, and

often answers just as well. The easier plan is to procure an ordinary three-dozen wine-hamper (this size will do for any bitch under 52 lb. in weight), and after lining the bottom with straw, to put the bitch in and fasten down the lid. An ordinary direction then completes all that is necessary to transport the package to any part of the kingdom which is reached by a railroad. In the summer, the night (being the coolest part of the twenty-four hours) is the best for this purpose, as the bitch will not then suffer so much from thirst, and she will easily bear the journey without food, if it does not last more than from twelve to eighteen hours, which time is quite sufficient to reach any part of her Majesty's dominions. The hamper should be strong and sound, for fear of her escaping and choosing a mate for herself. After she has been served, she should wait a few days, and then be returned to her owner in the same way. The usual plan is to send a man with the bitch, who sees that everything is quite right, and brings her back again after the warding is over. There are some cases where one of these plans is more suitable than the other—as, for instance, when a dog has such a very high character as to be in great demand. Here sometimes it happens that two or more bitches are sent together, and the man in charge, rather than refuse one of them, is very apt to pass off another dog of the same blood instead of the one intended; of course, in this case, the "hampered" bitch has the worst chance, and therefore, when a very popular dog is the selection, it is better to send a man upon whom dependence can be placed with her, for fear of such a result; as, if the puppies do not come exactly of the expected colour, there is always a suspicion of such a substitution, even though it may not really have happened. I was once inclined to suspect such an unworthy deception, not from the first-mentioned cause, but from the whelps being of a colour which I had little reason to expect. I therefore persuaded the owner of the bitch to see her himself put to the same dog again in the autumn, for the sake of satisfying himself and me; and the result was that the puppies were exactly like the former ones, and all doubt was at an end. Coursers certainly are a most suspicious race of mortals, and are constantly fancying their rivals in the race are contriving schemes which they would never suspect them of in any of the ordinary affairs of life. In this respect coursing is like horse-dealing, no one seems to trust his own best friend; and often, perhaps, with as much foundation for his want of confidence as in that pursuit, which everyone admits is not conducive to the honourable feelings of those who indulge in it. But let this suspicion be causeless or not, there it is; and for the purpose of avoiding all occasion for doubt, it is better to adopt every precaution. There are, however, some cases where no motive can be assigned for any substitution of one dog for another—as, for instance, when a young unfashionable dog is chosen, and where the owner of the bitch is satisfied, from personal knowledge, that she will have every care taken of her. In such a case the extra expense and trouble of sending the man are so much time and money thrown away. The kennel-man of the dog will see to everything being done *secundum artem;* but if the bitch is accompanied by your man, he should satisfy himself that the act is fully performed. Greyhounds are, many of them, quite incapable of procreation, either from being improperly managed by over-stimulating, or from being long kept in kennel and away from bitches, so as to force them into an unnatural state of continence. But whatever is the cause, there is no doubt of the fact that many dogs are nearly or quite impotent; and therefore the above caution is not so unnecessary as it might at first sight appear to be. Many men use all sorts of stimulating drugs to increase the procreative power in their dogs; but it is a most dangerous and improper plan, and one which ought never to be adopted under any circumstances.

There is a great difference of opinion as to the number of bitches which a dog is able to serve in the season, and I have often been asked the question; but I know of no mode of settling the exact line beyond which the dog should not be allowed to afford his services. As far as my own opinion goes, I do not think that a dog recovers himself *thoroughly* under three or four days, which would give two bitches a week as the *maximum* allowance. Now, as the season lasts from the 1st of Novem

ber to the month of May, this would allow of fifty bitches being properly attended to; but unfortunately the bitches do not come "in season" in this regular way, but, on the contrary, they all come together, or in groups of two or three at one time. Besides, when a dog is likely to have a large number of bitches, he is generally priced so highly as to make him chiefly in demand during the early part of the season, for few breeders like to bestow ten guineas upon a bitch in May or June with the full knowledge that her puppies will be too late for the produce stakes the next year. Hence, if a dog has more than twenty bitches in the season, he is sure to have at least three or four a week occasionally, and in this way, I am satisfied that many of these fashionable dogs are rendered unfit for their arduous duties. It is not that they do not get stock while in this high demand—for I know that large litters of puppies have been got on consecutive days—but I have seldom known a good litter thus obtained; and Mr. Gibson is distinctly of opinion that a bitch lined soon after a previous act is likely to have only a small litter. Now, if small in numbers, how much more likely are they to be puny in strength, and deficient in activity of nervous system. From all this, therefore, I should advise, wherever the choice can be made, that a dog which is not likely to have more than a dozen or fifteen bitches should be selected in preference to one more in demand, unless the bitch requiring his services comes "in season" in November or December. At that time few are likely to be sent, or to have previously weakened the dog, and of course you are not the worse for what may be hereafter done.

Duration of the Period of Heat.—The bitch is fully three weeks "in season" altogether, and is generally said to be nine days coming on, nine days fully on, and nine days going off. This is rather a longer time than my experience would allow as the usual period, and I should fix seven or eight days as the full term of each division. The best time for the admission of the dog is towards the end of the middle period, when the bleeding which usually appears in the *vulva* of the female is beginning to subside. Sometimes this period is a very short one, and by waiting too long the bitch refuses altogether to submit, and is rendered useless for that season. It is better, therefore, to put her to the dog as soon as she will take him, for fear of this unfortunate result; and I believe that it is of very little consequence when the act takes place, so long as the bitch is fully consenting thereto, and no force is applied.

The Management of the Bitch after her return should be of such a nature as to keep her in good health, without allowing her either to get too fat or too thin. As soon as she can safely be allowed to run at large, she should be taken out to exercise regularly every day, and until that time she should be led out for an hour daily. When a bitch can have a good run at liberty she is perhaps all the better for it; but I am quite sure that full health may be maintained by a couple of hours' exercise every day; and for the first six or seven weeks this may be with the other dogs, so as to occasion no needless trouble; after that time, however, she ought to be taken out by herself, for fear of her being knocked over or otherwise injured, or of her being tempted to jump over high gates, &c., by the example of the other dogs. She should, however, have her liberty in her exercise every day till quite the last, for if not tempted by others she will only take as much as comports with her matronly dignity. Great care should be taken as to her condition in point of flesh, for the two extremes are almost equally prejudicial. On the one hand, too high a state of flesh is mechanically adverse to parturition, and also tends to produce milk-fever after the process is completed; and on the other, too low a state of flesh is inimical to that full suckling of the whelps which insures their growth to a good size. The only guide which I can give is this—viz., that the ribs should be easily felt, loosely rolling under the hand, without being clearly visible to the eye; beyond this the condition is too high, and if the ribs are very apparent to the eye it is too low. About once a week a little castor-oil should be given, unless the bowels are quite loose; but, at all events, I like a dose given a few days before the end of the nine weeks—say about the sixtieth day. This cools the bitch, and prevents any bones or

other lumpy matter accumulating in the bowels and mechanically interrupting the birth of the whelps. During the last week or ten days—that is, after the fiftieth day, the bitch should be separated from the other dogs, and placed in the box which she is intended to occupy during her parturition; and she should be made quite at home there, at once preventing all occasion for fright, and keeping her perfectly quiet. A boarded floor should be raised for her a few inches from the ground, and this should be protected from the wall by a boarded partition at least six or eight inches high. If this flooring cannot easily be procured, spread a good layer of straw on the ground, and place a piece of old carpet upon that, then more straw on the top of that, which will form a good bed for the bitch. The reason of the necessity for the carpet is, that the whelps in their struggles to get at the teats of the bitch scratch all the straw away, and if the carpet is not there they lie on the bare ground, and are often seriously injured or killed by the damp and cold; but with this protection they only scratch till they get down to it, when they are unable to do more, and lie upon the warm carpet with the thick layer of straw under it. These little points may seem of no consequence, but it is by attention to them that disease is prevented; and that is a much more easy matter than removing it after it is once developed, especially in the whelp. Towards the last few days more sloppy food than usual should be given, in order to cool the body and also to promote the secretion of milk; but it should be very gradually changed, so as not to disorder the system by too sudden an alteration from the usual diet. If, therefore, the bitch has been fed upon flesh and meal, it is only necessary to substitute a larger quantity of broth for some of the flesh, and to mix it up with the meal into a sloppy state. Where greaves and meal have been used, the addition of a little milk is the best plan, or if not, then some broth must be added, as the greaves do not mix well with slop.

MANAGEMENT DURING WHELPING.—It is seldom that the bitch requires any interference at this time, for the puppy is so small in proportion to the size of the bony passage, that nature generally effects her purpose very easily. Unless, therefore, the mother is suffering from disease, little assistance is required. The process generally lasts some hours, and there is on the average nearly half an hour each between the whelps. The bitch should not be interfered with till all is over, unless she seems very much exhausted, when a little warm brandy and water may be given; but as nature leads her to swallow a large quantity of animal matter, consisting of the secundines of each whelp, and also to digest them, food is not now required. When, however, all is over, a little lukewarm gruel, made with milk, or mild broth, should be given her and repeated after two or three hours. Nothing else but this kind of food should be allowed till the milk is fully come, which by nature would be as soon as the whelps are born, or nearly so. Sometimes, however, in very young or very old bitches, it does not come on so readily; while, again, in very fat and over-fed ones, milk-fever sets in, and the secretion is postponed, or entirely prevented. It is in these cases that over-feeding must be guarded against; but here prevention is much easier than cure; only take care not to have the bitch overfed beforehand, and she will give no trouble from milk-fever unless exposed to cold or wet. The opposite extreme of low-feeding is not felt so soon, but it leads to much more unmanageable results at the second or third week after whelping, when fits are apt to occur, accompanied with excessive emaciation, weakness, and loss of milk. Strong broths, flesh, jellies, bread and milk thickened with eggs, &c., may be tried, with even the addition of stimulants, in the shape of brandy and water, or gruel with ale in it, or sherry and eggs. A teaspoonful of aromatic spirit of ammonia may be given, with the same quantity of Huxham's tincture of bark, twice a day. In spite of all that can be done, it sometimes happens that these bitches continue to have fits, and to lose strength and flesh; they must in this case be taken from their puppies, and their place supplied by either hand-feeding or a foster-nurse. After this they generally rapidly recover; but unless they are very valuable they should scarcely be tried again for the

same purpose. For the first two or three days the food should be lukewarm, and the bitch should be compelled to come out for the purpose of emptying herself at least twice a day, as many mothers are so proud of their newly-acquired wealth that they neglect themselves in their care for their whelps. More than this is not necessary, as exercise may be dispensed with for the first week, but after that time she should be led out for an hour a day. During the whole of her suckling the bitch should be well fed upon milk, if procurable, thickened with oatmeal or flour, and at least a pound of flesh with the broth, also thickened with meal, each day. Without this quantity and quality of food the milk is not sufficiently strong and good for the whelps, and they do not reach the size which is desirable, and which, indeed, is necessary in order that they may go on afterwards to that perfection of frame which is the object of the courser. A few shillings will therefore be now well disposed of in milk and other good and nutritious kinds of diet.

Sect. 9.—Management of the Whelps in the Nest.

The kennel-man should watch the whelps from the time they are born till they are two or three days old, as they often require a little assistance up to that time, especially in large litters. If it is desired that more than five or six should be kept, a foster-nurse should be obtained; but for a few days a good bitch will suckle eight or ten puppies very well. When one or two are very weakly—as often is the case with large litters—they are shouldered out by the stronger ones, and would, if left to their own efforts, speedily die of starvation; but by occasionally taking the strong ones away for a time, and leaving the others to suck, they soon are able to take their own parts, and often overtake their originally-larger and stronger brothers and sisters. At this time whelps are very readily chilled; and when they are thus seized they become purged, and soon die, emaciated to the highest degree. Six, eight, or ten drops of laudanum may be given in a little milk, two or three times a day, which generally stops the diarrhœa, or the laudanum may be united with a few grains of chalk and two grains of aromatic confection. No bitch should be allowed to suckle more than five, or, at the outside, six whelps, after the first week; and if a foster-nurse cannot be procured, it is better either to destroy all above that number, or to try and bring them up by hand.

The Foster-Nurse may be of any breed, but the bull-terrier, or any smooth bitch of good size, will answer the purpose best; a rough bitch will do quite as well if her coat is healthy, and her skin free from disease. It may generally be reckoned that for every seven or eight pounds in weight of bitch she will rear one puppy, and thus a 21 lb. bitch will do three whelps very well. She should have a muzzle on, except when fed, till she is quite accustomed to the new whelps; and to effect this, the best plan is to take away her own whelps, and place them with the young greyhounds in a basket for a few minutes; then return all to her, and when she has become in some measure accustomed to them, take away her own progeny one by one. This deprivation, however, should not be attempted for twenty-four hours at least. Many people fancy that puppies reared by terriers, &c., are not so good as those suckled by their own dams; but I have had and known so many examples to the contrary, that I cannot for an instant doubt the propriety of adopting this foster-nurse. Mr. Borron's Black Cloud litter are good examples of this plan, having all been reared by bull-bitches, in consequence of the death of their mother in whelping. On the other hand, I have known some good specimens of rearing by hand; as, for instance, Mr. Webb's Flirt and Havoc. At the expiration of about ten or twelve days (seldom sooner), the whelps begin to open their eyes; and after this they may be fed as soon as they will take cow's milk. When it is desired to assist the bitch in this way very early, the whelp must be taught to lap, by dipping his nose in the milk, upon which he soon takes to it, and licks his lips, if he does not lap direct from the saucer. At three weeks, unless the bitch is very full of milk, they will require feeding two or three times a day, and the food at first should be milk only, then milk slightly thickened with fine wheat-flour, and towards the fifth week this food with

thickened broth alternately. To make this broth, a sheep's head should be boiled to rags, the bones picked carefully out, the pieces of flesh broken up into very small fragments, and the whole thickened to the consistence of cream with fine white flour. Up to weaning, one of these heads will last one litter of whelps two or three days; but after that time a head is used in a single day. As soon as the whelps are able to run, they must be assisted up and down from their wooden-floored stage, if they have one, by lowering the front edge, and making it an inclined plane from the ground; the box also must be littered down with straw, and cleaned out every other day, as the whelps soon make it very dirty by their constant evacuations.

DEW-CLAWS are sometimes left on, at others cut off, and again by some coursers their nails only are pulled out with the teeth or a pair of pincers. The last is far the best plan, and it should be done at about the time of the whelp first seeing, before which the nails are hardly strong enough to draw well. There seems to be very little pain given, as the whelp scarcely whimpers.

SECT. 10.—WEANING THE WHELPS.

THE WEANING OF THE WHELP is the great test of the skill of the kennel-man, and very few understand it to such an extent as to avoid loss of flesh at that time. Some, however, will manage almost invariably to take the whelps away, and keep them as fat as they should be for an indefinite period afterwards, depending of course upon accidental circumstances, but extending long beyond the effects of weaning. Generally, however, whelps become very thin, and many are irretrievably spoilt, at this period. Whelps which have been very well suckled are the most difficult to wean without loss of fat; and, indeed, sometimes they are so unwieldy as to require some little diminution in order to bring them to a state fit for exercise. I am quite satisfied, that beyond five weeks the mother's milk is prejudicial rather than otherwise; and many whelps become thin and out of health from that cause alone. I have always found that by removing her entirely they take their food more regularly and are not constantly on the fret for what after all is only a drop in the ocean among so many and such voracious swallows. There are three grand principles needful to successful weaning—first, warm and dry lodging; secondly, suitable quality and quantity of food; and thirdly, regularity in feeding.

THE LODGING should be warm in proportion to the season, and if the weather is very severe, a stove is essential to success, not only at weaning-time, but before and afterwards. I am quite satisfied that from January to April, in frosty weather, the stove-system is of vital importance to the rearing of young whelps, and is even better than the heat of a warm stable full of horses. The fire should be lighted in the morning, and kept in all day, with good ventilation; then by damping it down at night, and closing the ventilators, sufficient heat will be retained to last till next morning, when, on entering the box for the purpose of feeding, cleaning, &c., the stove may again be lighted. I have not found that young greyhounds reared in this way were afterwards more delicate and susceptible of cold, but, from being more strong and well developed, they were actually more capable of resisting atmospheric changes. It is for the first two months that this artificial aid is required, after which time they generate heat enough when lying together to keep themselves warm, and by leaving off the stove they soon are prepared for facing the weather, either in their walks or elsewhere. Up to three months all puppies should be kept in a loose box, and should not be suffered to be at full liberty, as they are scarcely fit to take care of themselves till after that time; they do not get out of the wet if a storm of rain comes on, and are consequently, if exposed to the weather, at all times liable to chill. A loose box with the upper half of the door open, especially if it admits the sun, is the best place for them; but the door should be kept closed in cold, windy weather, and at night in all cases.

THE QUALITY AND QUANTITY OF FOOD are the grand essentials in rearing the greyhound, especially at weaning time, when all the experience and tact of the kennel-man will barely enable him to avoid errors. At this time the whelps require feeding four times a day, and their food should be composed of milk

and broth alternately, thickened with meal. Up to two months fine flour only must be used, with a little oatmeal if the bowels are at all confined; but after that time a coarser meal may be substituted; the change, however, must be very gradually made, by mixing a little more each day of the coarse with the fine flour. A sheep's head will now be required every day among five or six whelps, and from a quart to six pints of good milk, which quantities will serve them till nine or ten weeks old.

Regularity of Feeding is also of the utmost importance to all young animals, and especially to the greyhound whelp. The first meal should be at dawn, or as soon after as possible, and the last always about dusk—though in January the whelps must be fed a little later, or they will have to fast too long during the night. It is also of great consequence not to allow any one of them to overload the stomach; and if they are gross feeders, and very ravenous, those which are so should not be suffered to take more than the feeder thinks sufficient. Indeed, I am strongly of opinion that whelps should *never* be allowed quite to satiate their appetites, unless they are out of health and require a little extra nursing; but, as a rule they should always leave off with readiness for more if it were given.

Sect. 11.—Choosing the Whelps.

The Weaning Time is selected for this purpose, because up to that period they must remain with the mother; and while sucking her, the changes are so great that what was at first the best is now often found to be the worst of the litter. Most people would prefer waiting to make their selection till after the whelps are weaned, as they show their shapes better when comparatively thin than they do when loaded with milk fat. This, however, seldom suits the purpose of the breeder, who wishes to get rid of the trouble and responsibility as soon as he can. Unless, therefore, the breeder has the pick, he will generally insist upon the choice being now made; that is, as soon as the whelps are five or six weeks old. It is quite true that the age is just as good as a later one in all but one particular, and that consists in *the strength of constitution*, which has not yet been tested by weaning. Many delicate breeds get very fat while with their mothers, but when weaned, with all the care in the world, some of them will become thin, and refuse to grow and thrive. These, of course, would be rejected after weaning; and yet before that process is accomplished they are the most likely perhaps to catch the chooser's eye. In picking at weaning time, I should therefore by no means always choose the fattest, but the one which looks most hardy and firm, without, on the other hand, being wasted and thin. At this time the legs and feet are generally already sufficiently developed to enable the good judge to see what they are likely to be; and if the whelp bends his knees so far back as to stand upon nearly or quite the whole of the parts below the knee, I should certainly reject him, as he is always likely to be long and flat-toed, with weak knees. A spreading foot also shows itself by this time, and should be examined into, and rejected in favour of a close round foot. Examine also as to ruptures, which are now very evident; and though many good bitches as well as dogs have had them, they are by no means to be admired. Next, as to general shapes, sizes, &c. Many select by colour only, taking those which follow any particular ancestor in colour or marks. I cannot say that I have ever seen this guide of any use, but it is a very common practice, and certainly I have known it abused, by leading to the selection of a badly-grown whelp in preference to a much better-shaped one of a despised colour. The chooser should take the whelp up by the tail close to the root, when the shape will be well shown, as the fore-legs are then sure to be extended, and if they are well raised in front towards the ears they show a well-formed shoulder. The length of the stifles is also now beginning to be shown, and the general frame is visible, especially when held as above recommended. But nothing is more difficult and more dependent upon luck than this choice, and I have constantly known even the best judges make bad selections. When the pick is to be made after weaning, weight, and size, with apparent health, ought to be very strong guides in selection; and I would never take a puny, half-starved

whelp, if I could get one well weaned and healthy-looking, with at all the same frame—that is, if free from any obvious and persistent defects. At three months the choice may be made with a very good chance of selecting the one which shall turn out the *best looking* at last; but, after all, this may very likely not be the best greyhound; so that even here, the affair is a perfect lottery. Still, in the long run, the best looking are the best greyhounds; and therefore they should be chosen at all ages till a trial can be had. But at three months the whelps begin to move as well as to show their forms, and this test should also be used as well as those already described. By the end of the third month the style of gallop becomes apparent, and though some short and stumpy gallopers at that time become subsequently good goers, still I should always back the free and smooth-actioned puppy at that age to turn out the best goer at a subsequent period. It is astonishing how whelps of three or four months old will gallop, and what a pace they will go; and unless the one which is examined goes in a good form between the third and fourth month, I should certainly reject him, if I had the choice of another going in a different and superior style.

Sect. 12.—Rearing the Whelps.

Home-Rearing and Walks.—Much difference of opinion exists as to the comparative merits of these two systems; and to this day there has never been any positive series of experiments made on the two modes. Most people adopt one or the other, and then argue in support of that which they have used; but the only way to settle the question is to divide several litters, and rear part in one way and part in the other. This I have known done in some few cases, but never to such an extent as to lead to a satisfactory result. Of one thing there can be no doubt—viz., *that good dogs have been reared in each way.* If, therefore, I were asked my opinion, I should say that it will depend upon the degree of perfection in which either plan can be carried out. If the "walk" is a good one, the food good, and the farm free from hares and rabbits, there can be no reason why puppies may not be reared there as well as elsewhere. Again, if at home you have good accommodation and a good servant, with plenty of opportunity for exercise, then there can be no objection to your using those advantages. My own opinion is, that the home-plan, when well carried out, is free from every disadvantage, and has all the recommendations of the other in addition. On the other hand, the constant liberty leads the puppy to be lazy, and disinclined to exercise himself as he ought to do. This, however, *may* be an advantage for aught I know to the contrary; as it may really not be desirable that the puppy should gallop so much while he is growing, as he is induced to do when let out for a short period. It will not therefore do to argue upon this point as a positive good, because, as I before remarked, it may really be a positive evil. But a home-reared puppy, if neglected, is a most deplorable object; being too fat or too thin, with long toes spreading like a duck's foot, and in every way unfitted for his task. Such a dog is a standing argument against this mode of rearing, and very many such are produced every year. I have known thirty saplings and more reared together in a large building, and scarcely ever let out of it, with the only result which could be expected, of producing all bad ones. Unless therefore, proper care is likely to be taken, by all means run the chance of the "walking" system. In this latter mode the puppy is sure of air and exercise; food, indeed, is the only essential and desirable point in which he is likely to be deficient; but in most farms the puppies are able to get to the pigs' food, and that alone, with air and exercise, is better than the best food in the world without those essentials to health. If, however, a good "walk" can be obtained by a little extra pay, by all means should the money be bestowed, as a shilling a week extra only makes a pound or two's difference in the cost, while it often trebles the value of the puppy. My advice, therefore, is to keep your puppies at home if you can do so with the advantages I have insisted on as necessary to it; and failing that plan, to select as many good walks for them, of not more than two in one place, as are required for the rearing of your puppies; being guided in the selection by the proba-

bility of good food, good lodging, and good treatment—for nothing spoils a puppy more than harsh words and severe floggings.

Home-Rearing, from three months of age till they are old enough to be kennelled (which they may be considered to be at nine or ten months), should be effected in the following manner; indeed, if they are at "walk" they should be fed in the same way, or as near to it as possible, but they then have their full liberty, and require no one to look after them during their hours of exercise. It will be remembered that up to this age they have been fed four times a day, alternately on thickened milk and broth, the latter with the meat of the sheep's head broken up in it, and that I have advised the gradual substitution of coarse wheat-flour for the fine quality necessary in early puppyhood. By these precautions the dog-whelps ought, if of a large breed, and also of *tolerably early maturity*, to weigh at this age about 20 to 24 lb., and the bitches 18 to 22 lb. The after-weights are as follows; though much will depend upon the quality of food and the amount of exercise allowed, as some puppies gallop of themselves till they are as thin as red herrings:—

Ages.	Dogs.	Bitches.
	Small. Large.	Small. Large.
At three months.	20 to 24 lb.	18 to 22 lb
,, four months .	28 ,, 32 ,,	24 ,, 28 ,,
,, five months .	36 ,, 40 ,,	30 ,, 34 ,,
,, six months .	40 ,, 50 ,,	34 ,, 40 ,,
,, seven months	45 ,, 53 ,,	38 ,, 44 ,,
,, eight months.	50 ,, 58 ,,	40 ,, 48 ,,
,, nine months .	52 ,, 62 ,,	42 ,, 51 ,,
,, ten months .	54 ,, 65 ,,	44 ,, 54 ,,

I have inserted in each column the weights of small and large dogs at each month, but even these vary a good deal, according to the condition and mode of rearing in each case. Thus a very fat puppy of five months will weigh more than the same dog at six or seven months of age, if he then happens to be thin from teething or any accidental cause. But supposing the puppy to be well reared and in good condition, not over fat, and to be weighed at any of the above ages, then, according to his approach to the high or low weight there named, he will reach the highest or lowest weight given at any of the subsequent months; that is to say, as an ordinary rule, liable to the usual exceptions met with in all such attempts at generalization.

The Kind of Food most proper for rearing puppies is, I believe, a mixed diet of meal and flesh, with an occasional change to green vegetables, and even greaves. Undoubtedly the best meal is a mixture of oatmeal and coarse wheat-flour; the former of the coarse Scotch kind, and the latter made from red-wheat, and ground simply without dressing. Indian-meal answers very well indeed instead of wheat-flour; but, theoretically, it is not quite so full of strong muscle-making material. As far as my experience goes it is quite as good practically, and I have used it very extensively, on account of the higher price of wheat. The usual cost of Indian-meal is about that of barley, and consequently it is much less than the price of wheat.

The flesh should be sound horse-flesh, selected from horses dying from accident or from short illnesses, and not full of drugs; and, as a change, lambs or calves dying without serious disease, or "slink," may be used. Flesh will keep a long time, even during the summer, if hung up in the thick part of a shady tree; and none answers the purpose so well as a hawthorn. It should be brushed over with quicklime and water every five or six days. Besides these articles, butter-milk and potatoes, milk and flour, paunches with and without their contents, and barley or oatmeal with greaves, all are used by different rearers, and especially at the "walks" of the puppies. Many are never allowed to taste meat till they are trained, and then only for a few days, on the supposition that long continuance of meat makes their flesh too hard and their pace too slow. This opinion I am satisfied is not founded on fact, and that the puppy reared as nearly as possible on the same kind of food as would best suit a child, will be most likely to exhibit pace as well as the other *desiderata* in the greyhound.

In order to prepare the flesh and meal a boiler is required, and if more than one or two dogs are to be cooked for, it should be set as a furnace. The best plan is to get a Papin's Digester, untinned, which materially diminishes the expense, and order a small pipe to be fixed on to the side near the top, so as to carry off the steam, when in ordinary use, into the nearest drain.

The pipe must be of iron for a few inches, after which it may be of lead, for the convenience of bending it into the required angles. This digester may be set in brickwork like an ordinary boiler, and may be used either for boiling flesh—when the steam may be allowed to escape down the pipe into the drain, by which all annoyance to the nose is avoided; or, for boiling bones—the side-pipe being stopped by turning a cock fixed in it, and then the usual valve of the digester comes into play. These digesters are made of all sizes, but they are generally sold tinned, and therefore they must be specially ordered, if the extra price of the tinning is objected to. In plain iron—which is also far better for the health of the dogs—they cost from 30*s.* to 2*l.* 10*s.* or thereabouts, according to the distance from the manufactory.

The flesh having been boiled till it is quite ready to leave the bones (which requires some hours' gentle simmering) it should be taken out of the broth, and the Indian or wheat meal added by stirring it gradually in with a stick. Indian-meal requires nearly an hour's boiling; wheaten-meal fifteen minutes; and oatmeal ten only. Enough of the mixed flour should be stirred in to make the stirabout so thick as to be divisible when cold with a knife without much sticking to it. In reference to the proportion of each, the rule is to give as much oatmeal as the dog will bear without becoming too loose in his motions. Some naturally costive dogs thrive on oatmeal alone, and others again will scarcely bear the smallest proportion of it, so that no rule can be given; but I have found about one-third oatmeal will generally agree with the greyhound. Some people make the meal up into balls with a little water, and boil them in the broth along with the flesh; but I have never seen any advantage in this plan, and it is certainly more troublesome.

As soon as the meal has boiled the proper time, as above stated, the fire should be withdrawn, and the whole either suffered to cool in the boiler, or, which is better, it should be ladled out and cooled in thin layers, on flat tins or boarded coolers for the purpose. This, with the flesh cut up into small pieces and mixed with it, forms the ordinary diet of the puppies, according to this plan. The paunches are either cleaned and boiled with the meal to make stirabout (being used in the same way as the flesh in the above mode), or they are given raw and with their contents mixed with them. The latter plan answers very well, especially when the cow's paunch is obtained, and kept till tolerably dry, with the use of quicklime rubbed over it to absorb the moisture and prevent decomposition. It may then be given to the greyhounds entire, and they quickly tear it to pieces and eat it greedily, with a considerable quantity of the green half-digested food of the cow mixed with the paunch itself. Barley or oatmeal mixed with greaves is prepared by boiling the latter quite soft in water, after breaking them up into lumps of the size of the fist. The meal is then added as in making the stirabout.

THE RELATIVE VALUE of these various kinds of food is shown by the following table:—

KIND OF FOOD.	Materials used for making muscle, bone, &c.	Materials used in respiration, or in forming fat.
	Parts.	Parts.
Cow's milk contains	10	30
Fat mutton ,,	10	27 to 45
Lean mutton ,,	10	19
Lean beef ,,	10	17
Lean horse-flesh ,,	10	15
Hare and rabbit ,,	10	2 to 5
Wheat-flour ,,	10	46
Oatmeal ,,	10	50
Barley-meal ,,	10	57
Potatoes ,,	10	86 to 115
Rice ,,	10	153

It will appear from this table, that the flesh of the hare and rabbit contains an enormous proportion of muscle-making material, and from this cause they have been used for training purposes, but not, as far as I know, with any good result. Next stands horse-flesh; and I am quite sure that, when it can be procured of a healthy nature, and free from drugs, it suits the dog's stomach remarkably well even in training. The difference, however, is so slight between it and beef or mutton, that either will do. and certainly mutton is the mildest of the three, and can be given in the largest quantity without overheating or disordering the dog's stomach. Cow's milk comes next in this quality, and is used very generally in Scotland even as an ordinary food; but as far as my experience goes, it promotes flatulence and dys-

pepsia, and, though nutritious enough, it fills and loads the stomach, and causes the wind to be thick and the power of endurance very slight. As an article for *rearing* puppies, it is good enough, but not equal in producing a good frame to meal and flesh, as I have proved by direct experiment. It also unfits the dog for the subsequent use of flesh for training purposes, and the change from one to the other requires a very long and careful preparation. For this reason milk-fed dogs ought not to be fed more than a week upon mutton when in training, for when reared upon milk and kept upon it afterwards, they soon fall off when put upon flesh, and their motions show by their black character how much the bilious system has been disturbed. I do not therefore wonder at those who pursue this plan of feeding being averse to the use of flesh.

One of the best kinds of food for dogs at all times, but especially advantageous for puppies, is the sheep's trotter, or cow-heel; the former should by rights be scalded, and the hair and hoofs removed before boiling, which requires a good many hours; but I have known so many give them the whole mass of hair, hoofs, and bones, without injury, that I believe they are harmless.

Puppies are the better for occasional changes of food, and do not thrive well if kept upon one unvarying diet. If, therefore, the meal-and-flesh plan is adopted, they should once or twice a week have cabbages, or carrots, or turnips, boiled with the meal, or potatoes with the broth instead of meal. Even an occasional change to greaves is better than always keeping to flesh of one kind; but mutton and horse-flesh, with that of young lambs or calves, will be sufficient changes without having recourse to chandler's refuse, except in default of flesh.

The Weight of Food required from three months to five is greater than would be supposed; but the growth is so rapid, that the puppy absolutely demands large supplies of nourishment. Nearly a pound of meal a day will not be too much, and in some cases fully that quantity will be used, mixed, of course, with the broth, and with a small allowance at first of flesh cut up and added to it. The feeder should begin with about one quarter of a pound daily, increasing it to half a pound by the fifth month, at which weight it should remain till after the teething is accomplished, when three quarters of a pound will not be too much. This quantity may be continued till the puppies have been entered and tried.

Bones must be supplied daily for two purposes, one of which consists in mechanically cleaning the teeth, the other in affording a supply of lime for the nutrition of the young bones of the dog, and also in stimulating the secretion of saliva, which is necessary for perfect digestion. The larger the bones are the better, and a little dirt is no injury to them. The kennelman should give them on the dry grass, while he is sweeping out the kennel, and should always be at hand with the whip, to prevent quarrelling.

The Times of Feeding should be as follows—viz., an early and a late meal, and two others during the day, till the end of the fourth month; after which, to the end of the eighth, the two middle meals may be thrown into one; and at the expiration of the eighth month, except in very large and growing dogs, two meals a day will be quite sufficient, taking care to give free access to water at all times, and to prevent the greedy dogs from taking more than their proper share of the food.

The Best Form of Kennel for home-rearing is, I think, a mere shed with a raised bench, for the whelps to run into, and for sleeping in; and, in addition, a run of forty or fifty feet in length, and eight or ten in breadth, fenced off for them from a field or garden—if possible, shaded by trees. I do not like a tiled floor, such as is put in the regular kennel described at page 218, because it does not wear away the nails sufficiently; and also does not harden the pads of the foot; besides, the earth is a healthy anti-acid for the whelps to get into their stomachs, which they obtain by licking it off their coats in cleaning themselves with their tongues. I have found that common sheep-hurdles, lined with the wire-net, and having that kind of fence raised a yard above them by straining it from post to post, fixed at the end of each hurdle, answer the purpose best, as no greyhound can clear it, and by leaning it inwards they cannot jump upon it. It is the most effectual and the cheapest fence which

can be put up, as no mere wooden railing will hold the puppies, their teeth soon cutting through the strongest bar, if any interstice is permitted. When grass is selected for the run, it is soon worn away; and a little gravel or sand should be laid down, in order to prevent mud.

THE AMOUNT OF EXERCISE required by home-reared puppies is not much more than they will take in their yard or inclosures, where they gallop up and down, and play with each other for hours together; but, in addition, they should always be let out into a large field for a quarter of an hour before each meal, as the gallop which they then take causes the bowels to relieve themselves, and they are thus kept in a healthy state. The gallop should never be allowed on a full stomach; but when empty, I am satisfied that it does great good, and hardens and braces all their joints as they are formed. A puppy reared in confinement grows, perhaps, into a fine-looking dog, but being composed of soft materials which have never been strained, he lames himself the very first time he is let out, and is a long time recovering himself from its effects. Besides this, he must again be rested, to allow time for the restoration of the inflamed joint; and thus he never can be suffered to acquire that tone of ligament and hardness of bone which are necessary to enable him to stand the shock of the course with impunity. This, therefore, is the principal object in permitting these daily gallops, which often occasion slight temporary lamenesses, but not of such a degree as to lead to permanent mischief. If puppies are reared in this way, with the daily use of a large field, and the run of a yard or strip of natural soil, especially if it is gravelled, they do not want any other exercise until they are kennelled, which should be commenced at nine or ten months, or earlier, according to the season of the year. It must be remarked here, that this open-yard system does not answer after October or the beginning of November, and then only in fine seasons; for in a cold and wet one it must be stopped as soon as weather of that kind is thoroughly established.

GENERAL TREATMENT.—During this time no brushing should be used, and the dog's natural cleanser, the tongue, is the best adapted for the purpose of keeping his body free from dirt. In all but the very hot months, plenty of clean straw should be allowed; but in the height of summer the boards must be left bare, as the dog will lie on the ground in preference to a straw bed. At this time fleas, ticks, and other vermin, are very apt to infest the dog, and may be removed by the use of soft-soap and soda, as I shall explain (page 249). If the tick is the kind of vermin present, some white precipitate must be rubbed into the skin, and after a few days brushed out again; but the muzzle must be kept on for some days, and the dog must not be suffered to get wet. Brimstone may be occasionally rubbed into the coats with advantage, though it does not kill any kind of vermin in a dry state, but it is licked off by the tongue, and thus forms a cooling kind of medicine for the puppy. At this time the occasional use of a dose of castor-oil and syrup of buckthorn, in equal quantities, when the puppies are a little "off their feed," will serve to restore them to their appetites and prevent further loss of health. If they are otherwise ill, they must be treated according to the directions given under the head of "Diseases of the Dog."

EVERY PUPPY SHOULD HAVE A KENNEL-NAME given him before he is many months old, and he should be accustomed to it as soon as possible, so that he may be able to know when he is rated or called back, and may come when called, &c. This is very important in saving the young greyhound from unnecessary correction, which he might otherwise incur from ignorance rather than vice.

CHAPTER V.

BREAKING, KENNELLING, AND ENTERING.

Sect. 1.—Breaking to Lead, Kennels, &c.

Leading is necessary for various purposes, and should be taught the puppy either during the progress of his rearing, if this is effected at home, or, if not, as soon as he is brought from his walk. Of course, in bringing him, he must have had a collar on; but it is necessary not only that the dog shall come along by force, but that he shall follow cheerfully and handily. One of the most common causes of failure arises from the awkwardness of the greyhound in the slips, and this has its origin in imperfect breaking to the leading strap. I have seen the chance of many dogs utterly destroyed by their pulling in the slips, and therefore I would strongly caution the young courser to be careful that the whole process is thoroughly effected by which handiness in the slips will be secured.

Now, as I before remarked, steady leading is the first part of the puppy's education, and it should be taught as follows:—The neck-strap should be the ordinary wide one, at least two inches in breadth, with the common swivel, by which it is attached to a leading-rein about five feet long; this should be buckled on tightly in a field of soft turf, and the man should then call the dog by name in an encouraging manner. Generally he begins to pull against the strap at once, and fights most resolutely, by attempting to throw himself into all sorts of forms, and biting at the strap. He should be suffered to exhaust his efforts for a few minutes, and then the man should pat him and endeavour to make him follow, and, if he still refuses, he must be steadily dragged along by the leading-strap. After a few yards he almost always gives up all resistance for a time, and follows at the heel, but soon tries another bout, and this is often followed by a fit of the sulks. The only remedy is a patient pull upon the collar, and generally in half an hour the dog follows pretty quietly; but in some cases there is a much longer and more troublesome resistance. After the dog has followed his master about the field for a short time, the collar may be removed with a few encouraging words, and another dog taken in hand; but it generally requires several lessons before the young puppy is quite perfect in leading. Indeed, he seldom is so until he has been led about for hours in the coursing field, which should always be the last lesson before he is himself entered to his game. At first, when the hare is seen, the greyhound seldom takes much notice, but when other dogs are heard whimpering, and their anxiety is witnessed, the contagion is soon conveyed to the young one, and he begins to pull at his collar and to enter into the nature of the sport.

This is the critical period when the good manager makes his dog handy, and the bad one confirms him in the foolish habit of pulling. All young dogs pull naturally against their straps when they see anything going on in which they are interested: and the unskilled leader pulls again; upon which the dog, in his eagerness, keeps up the strain, and leans upon his collar in a steady, dull, continued pull, which tires him a good deal, but without being of much consequence at that time. When, however, he is put in the slips, he is all anxiety to be doing, and pulls away as he has been used to do with his awkward leader; and, moreover, he tires himself at a time when it is of such consequence that he should be fresh and vigorous.

In order to avoid this habit, as soon as the young dog is felt to pull, the leader should give him a sharp check, and hit him lightly on the nose, if the first is not sufficient; but by continually checking him when he begins to pull he soon leaves it off; and however eager he may be, he never ventures to run the risk of the disagreeable sensation produced by checking him severely, unless a hare crosses so closely to him as to overcome his prudential feelings; and in this case the leader should let him pull, and run with him as the slipper does, and thus teach him to *pull steadily when the hare is actually before him, but at no other time.* This is the essential feature of the well-broken dog, and

is a point which ought never to be overlooked.

A Muzzle should also be put on occasionally, either of the form shown below, or made of wire according to the French pattern. Whichever is adopted, it should be left on even in the kennel for some hours. The reasons for this necessity are the following:—First, it may very probably be required in the kennel before training, in case any accident occurs, or any poisonous dressing is to be applied, and then it is a bad time to begin the use of it. Secondly, many young dogs are such savage fighters or biters, as to require the muzzle

always on at exercise; and when well made they can gallop and play with it on just as freely as without it. Thirdly, in leaving the dog in a strange kennel during the week of running, a muzzle must always be left on; and also in his exercise on the day of the running, for fear of accidents, &c. The earlier the dog is accustomed to it the better.

The Amount of Exercise necessary to keep young dogs in health, after they are brought into the kennel, is very considerable; and if well fed, they must have from two to three hours a day at the least. It is much better to be on foot than on horseback with young puppies, as they are very rebellious, and inclined to chase everything which will run away from them; unless, therefore, they are taken out on the open downs, and the horse is very handy, they are apt to get into inclosures, and there set the horseman at defiance. The whip should be used as sparingly as possible, but still the dog must be kept in some degree of subjection, or he will get kicked to death by running at horses, or perhaps be gored by bullocks; cats, fowls, sheep, pigs, &c., will each in their turn be chased, and the man in charge will have his hands full, in saving the lives of the cats and fowls. If cat-killing did not lead to other mischief, it would no doubt be beneficial; but as it leads to wilful and malignant injuries from the owners of the cats and fowls—and very naturally so—it must be avoided by every possible means. There are some breeds which are very averse to cats, and can scarcely be broken from killing them, while others never take any notice of the feline species, and give no trouble in this way at all. The muzzle is the best remedy in confirmed cases; but it sometimes leads to the loss of an eye, from the cat scratching the dog when he attacks her without the power of killing her. Sheep are the most important, as the expense of one killed is serious; and when once the greyhound takes to this kind of amusement he can never be depended on afterwards; he must, therefore, never be allowed to chase sheep for a moment longer than can be avoided. Many people lead their greyhounds on the road as a regular practice, and loose them only when they arrive at the fields; it is, perhaps, the safest plan; but they take a great deal of good exercise on the roads when at liberty, and harden their feet thereby very considerably. Coupies are dangerous things on dogs without leading them, as they often start off together; and in passing posts, &c., if they take opposite sides at a racing pace, they damage themselves very considerably; if, therefore, *any straps* are put on, the dogs should be all led by single leading-reins.

Bathing or Swimming Greyhounds I believe to be a very healthy and useful practice in the summer, as it induces them to gallop at a season of the year when otherwise they would not be much inclined that way. In hot weather greyhounds are very lazy, except in the early morning and in the cool of the evening; but after going into the water they almost always gallop about till they dry themselves, and in this way avoid the ill conse-

quences which might otherwise ensue. On this account, therefore, the plan may be encouraged; and I believe it will never lead to rheumatism if care is taken to keep them on the move till they are thoroughly dry. Some greyhounds can never be kept out of the water, even in the depth of winter, and they are generally very hardy; but it is not a thing to be then encouraged, as they are apt to get in when you least wish it—as for instance, just before reaching home. For the last two months before training is to commence an occasional hour or two of horse-exercise should be given, as it accustoms the dogs to that kind of work, and hardens the feet by wearing them down on the road. This should be given about once a week, or three times in a fortnight; and the distance may be gradually increased from six miles to twelve or fifteen.

No Clothing is necessary before training commences, except in standing about in the coursing-field for the purpose already described at page 244, when a good warm cloth is required in cold weather.

The Food, from the tenth month to the commencement of training, should be of such a nature as to keep the dog in high health, without over-stimulating him, or making him fat and unwieldy. After the growth is completed, and the spring-trials are over (which may be fixed at the month of March), it is not desirable to keep up quite so stimulating a diet as I have advised for the last four or five months of rearing. From a third to half a pound of flesh daily is amply sufficient, and one day in the week the dog should have nothing but a pint of thin slop. The same *kind* of food should be given as before, but in such *quantities* only as to keep his ribs just covered, and it should not be of quite so rich a *quality*. Oatmeal may be given in larger quantities than before, and a slight occasional looseness is of no consequence, if there is no actual purging accompanied with an appearance of mucus. It is very important to avoid all food which shall lead to eruption of the skin, and to give only such an amount of nourishment as will sustain the health without doing more. A certain amount of flesh is beneficial, because it must be given in training, and if the change is suddenly made it disagrees frightfully with the stomach and bowels; but when a portion is given as a regular article of diet, it may be used for many months together without leading to any bad result. From March to July inclusive I should advise the puppies to be fed twice a day upon stirabout and a small quantity of flesh, varied as much as possible by getting horse-flesh, inferior beef, paunches, dead sheep, "slink-calves," &c. &c., at different times. These may be used four days in the week; then one day with potatoes instead of meal; one day with greens, carrots, or turnips, mixed with the stirabout; and one day of starvation on a pint of slop will complete the round. This last banyan-day is necessary for health in all the tribe to which the dog belongs, and it will greatly add to his stock of that most valuable commodity. It is better to use this diet on the Sunday, when most people give their dogs a day of rest, to which the starvation is more applicable than the fuller kinds of diet.

The Kennel for the public greyhound should be constructed in two portions, both of which should be under cover. One of these is the lodging or sleeping room, and should have a raised bench or bed for the dogs to sleep upon. Each kennel should be made to accommodate four or five dogs, which is the very utmost number that should ever be put together. The plan already described at page 218 as suited to the private greyhound is equally adapted to the public performer; it is intended to accommodate twelve dogs in the regular way, or eighteen at a pinch. It is divided into three compartments, which will each do for from four to six dogs. Each of them is a fac-simile of the others, and therefore a description of one will suffice.

The floor should be laid in glazed tiles well set in cement, upon a foundation of concrete. There should be a trapped-drain in the middle of each compartment; and it is a very good plan to have a pole suspended over this for the dogs to lift their legs against. A fixed pole is often injurious, by occasioning sprains against it in play. The bed should be raised from the level of the floor about eighteen inches, as by this means all chance of damp is avoided, and the greyhound likes to be high and dry. Sometimes there is a very tyrannical

dog in the kennel, and he will not allow any other to rest in peace near him, but drives him off the bed. When this is the case, the beds are better made in separate compartments, and on different sides even.

Ventilation is of great consequence; and a window of the following form answers the double purpose of giving light and air. It is made to open with a hinge at the bottom, and when closed it has two boarded V-shaped sides projecting outwards, as at *a*, *figs.* 1 and 4 page 218. When open (*fig.* 5), it carries these sides with it into the sleeping-room, and the air is admitted at the top without any draught at the sides, which are closed by the V-shaped flats already described. A door is required beween the court and the sleeping-room, and an iron trough for water in each. Of course there must be a gate into the outer court, and the whole of the lower part of the wooden rails must be guarded with wire-netting, or wire-work in some shape.

Stoves are not wanted in these kennels, because it is never desirable to give dogs more warmth at home than can be obtained abroad; and as it is impossible to get such luxuries supplied in the boxes of inns, where greyhounds are usually located, it would never do to lodge them more warmly at home than abroad. Indeed, without stoves the difference is sufficiently great, and a cloth or two will be required to equalize the difference even then. Many dogs catch cold at the meetings, from insufficient warmth; and therefore it would not be desirable to increase the risk.

KENNEL MANAGEMENT.—The man in charge should clean out the kennels daily in the most thorough manner, and in the summer-time should wash them down every morning. In the cold weather I do not like water, but prefer sawdust, which may be kept constantly fresh, and swept out quite clean every morning. An occasional wash-down may be had recourse to, in order to make all sweet; but the greyhounds should be kept out of the kennel till it is quite dry. No bones should be suffered to remain in the kennel, or they will assuredly lead to fights, often of such a savage nature as to cause serious injury at the very time when the services of the dogs are particularly wanted; but they should be given regularly every day for half an hour or an hour. In fine weather the green turf is the best place for this, at other times all but one dog may be shut in the lodging-room, and that one may be left outside by himself with his bone; and after a time another one may be let out, and the first one shut up inside. By these precautions, the needful amount of bones may be given without risk or injury.

NO PHYSIC during this time will be required, if plenty of green vegetables are given, and if the dogs have access to grass; but an occasional dose of oil will do no harm. Of course all deviations from a state of health must be watched, and rectified, upon principles to be hereafter described under the head of "Diseases of the Dog."

SECT. 2.—ENTERING.

The greyhound requires very little teaching, or entering, as it is called, to his game, but readily takes to it, partly by instinct, and partly by imitation. Some dogs, however, are very late in acquiring that savage desire for blood which is essential to good running, and often go through their puppy-season without caring to kill, as was the case with the celebrated Mocking-bird, who would hardly run into her hare till the end of her first season. Many others have the same kind of good-tempered style for a time; but generally the taste for blood comes sooner or later, and the greyhound often becomes doubly savage in proportion to his late acquirement of it. It is, however, desirable that the young dog should know what he is allowed to chase as soon as his bones and sinews are sufficiently set for the purpose. Besides, if he is to be used in puppy-stakes, he will be wanting experience more or less, according to his natural abilities, before he is fit to compete in them; and as the ground is hard in the autumn, and the weather hot, he must be spared at that time as much as possible. Spring-entries, therefore, are preferred by most people, if the age of the puppies will allow of them; and I believe that ten months in the bitch and twelve in the dog will enable them to bear the shocks of the course with impunity. A large, loose, and overgrown animal should of course be husbanded; but most dogs and

bitches of those ages will, if well reared, be fit to be entered.

THE CONDITION AT THE TIME OF ENTERING TO HIS GAME should be carefully attended to, for a very fat puppy will do himself, or herself, great injury in a severe course. A little gentle physic and light feeding will however, with plenty of exercise, get the puppy fit for his trial; and I should never advise more severe training than this. All puppies gallop a good deal if they are properly reared and exercised; and, if attention is paid that they are not grossly fat, their wind will be good enough for a single course. They should be fed very lightly on the previous day, but not so much as to weaken them—say to about two-thirds of their usual feed. They may also be fed a little earlier than usual, but still in the evening—say five o'clock.

OLD ASSISTANTS *v.* YOUNG ONES.—This is another point of dispute, some people preferring to put their puppies down with old companions, while others dispute the propriety of this plan. My own opinion is in favour of the young greyhounds having the work all to themselves, as I am quite sure they are more discouraged at being beaten by their old assistant than when they fail to kill their hare without one. I much doubt the utility of blood to the greyhound as an encouragement, unless he himself effects the kill; and I have never seen any good done by allowing an old dog to kill a hare for a young one. But if it so happens that the young one kills, after the old one has knocked the hare about for him, much good may result; and therefore, instead of selecting a *good* killer to put down with a puppy, I should, on the contrary, choose a fast dog which had not the faculty of killing, but which would reduce the hare to the pace and powers of the puppy. This is the kind of dog wanted, and when such a one can be procured, I should certainly prefer him to any young puppy as an assistant, if one which is highly prized is intended to be brought forward, so as to be ready early in the next season. But if this kind of old dog cannot be obtained, then it is much better to put down two puppies together, taking care that both have seen enough to lead them to give chase as soon as the hare is afoot. If the dog has never been slipped at all, it is better to let them have an old assistant, as he may otherwise, when put down with one of his own age, refuse to leave the slips and leave his fellow in the lurch. When a puppy sees another dog run forward in pursuit of the hare, he generally follows suit; and if he does not do anything else, he acquires a zest for the sport. But after this is once acquired, the entering should be conducted upon the above principles.

Many saplings of modern breeds will run very smartly and cleverly when eleven or twelve months old, and this is especially the case with bitches, some of which run into their hares at that age with great certainty. It must be remembered, however, that March hares vary very much in their running; and therefore, if a puppy commands his hare well at that time, it does not follow in all cases that the dog is good, as it may so happen that the hare is of an inferior kind, rather than that the dog is a superior animal. This mistake has often led to a bad greyhound being nursed during the summer as something very wonderful; and on the advent of October the bubble has burst by the discovery of his possessing very opposite qualities. The young courser, therefore, should never calculate upon the goodness of his sapling upon the ground that he worked and killed his hare in good style; but if he or she ran well with a known good greyhound, he may depend on having something likely to turn out a flyer in the next autumn—barring the usual accidents to which this frail animal is subject. As soon as the sapling knows his business, and has seen three or four hares, and especially if he has made a good kill, no more should be done till the next autumn. The grand point is not so much to give the dog practice as to instil into him the zest for the sport, and to save the trouble of finding two or three extra hares in the following autumn, when they are very difficult to come at. Besides, if the greyhound is now encouraged after running his hare, he is prepared for rating in case of his chasing sheep, poultry, &c., and thus distinguishes between the proper object of his pursuit and the forbidden subjects, for chasing which he is constantly being scolded and punished.

Sect. 3.—Removal of Ticks, Fleas, and Worms.

Fleas and Ticks.—Prior to commencing training in earnest, it is necessary to remove all parasitical animals, which disturb the rest of the greyhound if permitted to continue to infest his skin. Fleas may be destroyed by soft soap and soda rubbed into the skin in a state of solution. Equal quantities of the two should be boiled gently in enough water to make a solution of the consistence of syrup, and when this is lukewarm it should be well rubbed into the skins of the dogs with the hand, and suffered to remain on for a day, if the weather is not very cold; and taking care to keep the dogs moving till they are quite dry. After the expiration of twenty-four hours it should be well washed off with plenty of warm water, and the dogs well dried with a cloth, and then taken out to exercise. This not only kills the fleas and lice, if there are any, but it also cleans the skin, and is not injurious to the dog if he licks himself. It does not, however, kill the ticks, and they must have plenty of white precipitate rubbed in dry—using the muzzle carefully while it is applied, and keeping them out of all contact with water. After twelve hours the powder should be brushed out with a dandy-brush, and the above soft soap solution may then be applied with advantage. A mixture of one part of Calvert's carbolic acid wash with 100 parts water also kills fleas, and if used repeatedly will destroy ticks, but it is not nearly so destructive of the latter as white precipitate.

Worms.—During the whole of the rearing, a constant watch should be kept for worms; and if present, they should be eradicated with the medicines prescribed under the head of *Worms*, in the "Diseases of the Dog." But at this time, before going into training, so constantly are they present, that I should never rest satisfied without giving the dogs a dose of areca-nut, to clear them, in case any are in existence. I believe that nineteen dogs out of twenty, at eighteen months old, have some of these parasites infesting their bowels; and as it is too late to give them strong medicines when in training, I prefer the precautionary treatment in all cases. I have known so many instances in which a dog is obliged to be thrown by in the middle of his work for this purpose, that I am satisfied the above is the best plan. I should therefore give him a dose, and if it brings away any worms, I should repeat it, or if, as is sometimes the case, it fails to clear the dog, I should give the Indian-pink, as hereafter advised, or the remedies for tape-worm, if it is present. The areca-nut is the best for this purpose, as it always brings some away if there are any, even if it does not clear the greyhound; and it is not so injurious to the constitution as the other kinds of vermifuge. It will almost always show the presence of tape-worm, and is sufficiently to be depended upon for that purpose; but it brings the joints away alive, and therefore it is chiefly as an index to the state of the intestines that I advise its its being employed in all cases, before resorting to stronger remedies.

Whilst under these remedies, the dog must be kept separate, in order that his motions may be watched, though if the others are quite firm in their *fæces*, the kennel-man will always know, if only one is in physic, what is the result of its operation. When at exercise also the dog in physic must be watched, as it is then that he is most likely to pass the worms, from the effect of his play. Whenever he has passed this ordeal satisfactorily, or if otherwise, and he has been cleansed by a regular course of worm medicines, he may be considered fit to begin his preparatory training.

CHAPTER VI.

TRAINING, AND GENERAL MANAGEMENT IN RUNNING.

Sect. 1.—General Remarks on Training.

Up to this time the good *breeder* has been chiefly in requisition; but now another official comes into play; and it does not always happen that the same person unites the qualifications for both these functions in equal proportion. Many men can breed good greyhounds without knowing anything of their treatment while in training; and again, the reverse holds good in a still greater proportion of cases. Nothing is so simple as the rearing of the puppy, excepting during illness, if due attention is paid to his food and exercise; but few things are more difficult than the bringing out of a kennel of greyhounds, of various breeds, in a high state of perfection.

The fact is, that in a dozen running dogs, even of the same blood, no two will take the same amount of work; and when of divers strains they must all be studied separately, and each must be fed and trained without any reference to his kennel-companions. It is a well-known fact, that one dog will run best while as fat as a dog *can* run, while another must be reduced to the condition of a scarecrow before his racing qualities are developed. No rule, therefore, can be laid down as to weight or work in all cases; and all that the trainer can do is to study the various constitutions which he has to treat, and, in addition, to make himself fully acquainted with the peculiar characteristics of their several breeds —that is to say, as to carrying flesh with advantage or the reverse, as to the amount of work and practice required, &c. Then, when he has once satisfied himself as to the form in which each will best appear, either by the above analogical process, or by direct experience in former instances, he will set to work to prepare his dog so as to bring him up to that standard on the day of running.

Suppose, for example, that A has a dog (No. 1), 25 inches high, and weighing at ten months, when he is in good condition, 60 pounds. He knows that most dogs will run at about the same weight as they were at that age, when in good order, and therefore he would expect that his dog, under ordinary circumstances, would do so too; but, on the other hand, he also is aware, from his knowledge of the breed, that they require to be drawn very fine, and stand a vast deal of work before they are at their best; and that if they are at all fleshy they are pursy and thick-winded, having a tendency to lay on fat inside and out. This dog, therefore, will work much more severely, and feed more lightly (with extra physic, &c.) than the rest of his kennel.

Again, he has another dog (No. 2), of about the same size and weight, but belonging to a breed which he knows is shy of work, runs well if in flesh, requires very little practice, and is soon spoilt by over-training. This dog, therefore, he will prepare very differently to No. 1, and will, most probably, leave alone to his ordinary exercise till the second or third week before running. Some dogs of the sort similar to No. 2 will bear very little work, and if they are taken out for a few miles with a horse, they loiter behind, and when forced to work become dull, heavy, and unfit as well as unwilling to exert themselves. Such animals are my abhorrence, as they often run a single course, or even two, most brilliantly, and in private lead their owners to fancy them perfection itself, but when they come to stand the ordeal of two or three severe courses, they die away, and are utterly useless.

But there is another kind which the trainer often meets with, which we will call No. 3. These are capable of being trained, doing good work in a cheerful manner, and, being of good constitutions, and apparently all that is desired, they make their first appearance in high feather, and perhaps run and win their courses in an extraordinary style. Hope is on tiptoe, and they are considered safe to win their stakes; but on their return from their second or third courses a nail is discovered to be drawn, or a stopper slightly cut, or some other mechanical

injury done, as so often happens in the coursing-field. This in No. 1 would most probably be of no importance, as, even if he went lame into slips, the first sight of the hare would take all the starch out of him; but in No. 3 the leg is held up in the air, and very often is scarcely put down when the hare goes away, but the dog gallops on three legs behind his antagonist without making an effort. This kind of dog, therefore, the trainer will know must be drawn whenever he meets with an injury; and the good judge always does so in case of his having any of that kind which will not bear punishment, either in the nature of severe courses or mechanical injuries. It is astonishing what a difference there is in this respect. One kind will be tired to death by either training-work or coursing, and yet will come out the next day as gay as larks. These are the animals which should be prized and bred from; and if they can be obtained of good pace and working-powers, they are the sort to pull through good stakes.

Dogs to be Classed.—Every trainer, therefore, should consider his dogs separately, and class them under one or other of the above three sets according to their capabilities: first, of carrying flesh; secondly, of bearing continued work; thirdly, of standing punishment, both in the shape of sharp work and also in that of accidents; and fourthly, as to the amount of practice required. Then let him make up his mind what each will require to bring him to his best. I shall therefore consider the above three classes separately, and describe the kind and amount of work suited to each. The only and the great difficulty is to decide upon the class to which any particular greyhound belongs.

Individual Distinctions.—But besides the difference in the breeds, there is also great variation in the tempers, dispositions, and habits of the individuals composed of those bloods, though these points will generally correspond with the breed of dog in a remarkable degree. Thus, some are almost invariably savage and surly with one another, but fondling on man, and always anxious for his approbation; others, again, are sulky brutes, and even refuse to follow their feeder with any degree of alacrity; they are always poking into queer places, and lagging behind, and do not come when called by the whistle or voice. These dogs are seldom certain runners, as they turn sulky if they cannot at once command their hares, or if they sustain any fall or other accident. On the other hand, many greyhounds are merry and good-tempered on all occasions, and give no trouble either in kennel or out.

In general it will be found that dogs will bear that kind of treatment to which their ancestors have been accustomed; and therefore, if your greyhounds are from a kennel where horse exercise has been largely adopted, you will find that they train well with it, and follow a horse without trouble. On the other hand, Lancashire greyhounds, where horses are not much used, seldom follow well, and do not stand that kind of work with impunity. I have always found that these particular dogs must be treated differently in this respect from either the Wiltshire or Newmarket, or most of the Scotch breeds, where horses have been used to train them for many years. Hence, no rule can be laid down in all cases, and no surprise need be felt that one man trains without the aid of a horse, while another requires two, if he can get them, to bring his charge to perfection.

Again, there is a great difference in the desire for play exhibited in different breeds, and in the various individuals also; some dogs will run themselves into most excellent condition, if only suffered to play as much as they like; but, again, others are either so lazy as to refuse altogether to gallop without necessity, or else so savage as to stop the play of all (including themselves) by rushing upon the leading dog, and biting him severely. It is seldom that a playful dog can be found which will lead off in spite of these attacks, as, if fast enough to escape them for a time, he must be caught at last, and is then severely punished for his long defiance of his pursuers. The very best dogs are often thus savagely inclined; and they are very difficult to manage, as they seldom lead off, knowing that their victims on former occasions are sure to retaliate upon them. Whenever there is this tendency to bite and rip

one another in play, a muzzle should be constantly worn, of the pattern described at page 245; and as with it on the dog can drink water out of a pond or brook, by thrusting in his muzzle, and can also put his tongue out and open his mouth, it is no impediment to free exercise.

Weighing.—It is in my opinion a good plan to weigh all dogs before beginning to train them, which may easily be done by using a pair of steelyards and a couple of horse-girths, one of which, with a knot in it to make it shorter, is passed under the flank, and the other between the fore-legs and over the shoulder on each side; the four buckles may then be tied together, and the dog suspended from the steelyard by them. By thus weighing the dog, the food and work may be much more exactly proportioned, for it is much easier to tell by this test how fast a dog is losing or gaining flesh than by the eye, which is not capable of any nice distinction from day to day.

Water should still be supplied in the kennel, but it should now be boiled, in order to accustom the dog to the same kind of drink when at his quarters at the meeting, where the variations of this liquid require boiling, in order to make all as nearly alike as possible.

After his feeding, the dog may be left quiet till next morning; and I do not even like the kennel to be disturbed for any purpose. If the dog is brought out, he will generally empty himself, but he is far better with his food in him than that it should pass on before he has fully extracted the nourishment from it. I am satisfied that the dog, if fed once a day, should never be disturbed after his meal till the next morning; but if fed twice a day, as is the practice in some kennels, he may of course be brought out, to prepare him for the reception of his second meal.

Clothing at Exercise is used by some people in order to reduce the weight of the dog, and I am bound to admit that I have seen several kennels of fast dogs trained in this way. Their condition was not perfection, certainly, as they seemed deficient in stoutness, but they were not rendered slow by the clothing which they carried, as is generally supposed to be the result of that practice. On the other hand, I have certainly seen it attended by "the slows" in other hands, and I cannot fancy that the practice is a good one. The dog does not sweat by his skin, and the only way in which the clothing acts is by its weight increasing the work he has to do, and by its warmth causing the tongue to throw off its fluid by evaporation somewhat more rapidly than usual. In the kennels I speak of the dogs are accustomed to be slipped a distance of nearly a mile with one, two, or three cloths on, according to the desired effect to be produced. Their training is very short, and they are seldom at work more than a fortnight or three weeks. This plan is said to supersede the necessity to a great extent of physic and starvation; but, as I never tried it, I cannot speak from actual observation.

Sect. 2.—Variety No. 1.

Dogs of the same Character as No. 1 should have at least five or six weeks' preparation before they are fit to run—that is, if they are to be tried in private before they are exhibited in public. Most people like to know which are their best dogs, and to do this they must get them fit at least three weeks before the public contest Now I am quite satisfied that it is impossible to do justice to a dog of this character, and to get him into anything like his best form, in less than three weeks; and in order that this time shall suffice, he must already have been regularly exercised two or three hours a day, with an occasional journey following a horse. Under this treatment he will be half fit to run, and with many dogs like No. 2 it is nearly all that can be done; but No. 1, and such as he, can be brought out in a much better form by attending to the following directions—which, I again repeat, are utterly injurious to No. 2. The dog thus prepared by regular exercise on foot, and also following a horse, and having had his doses of worm medicine, should have, as a final dose, a ball composed of the following ingredients:—Take of

Powdered jalap, ten grains.
Barbadoes aloes, one drachm.
Ginger, five grains.
Oil of aniseed, three drops.

Mix, and make into a ball. This is the dose for a large, strong dog, and will

clear him out, and render him cool and yet lively, and fit for anything.

THE FIRST DAY'S WORK should begin the day after this ball has worked itself off, with the aid of good slops, &c., when the dog may be taken out with an assistant, who should be a stranger to him, for the purpose of holding him while the trainer gets to a distance from him. Before this is done the dogs should be allowed to play about for an hour and a half—keeping them on the move by walking, in order to prevent the idle ones from lying down. After the expiration of this time the assistant should take up all the dogs to be slipped, or as many as he can hold, and running the loops of their leading-reins through a stirrup-leather, he should buckle it round his waist. Here again a muzzle is often required, as I have known dogs fall upon the boy holding them and bite him severely, whilst he could not release himself from them, on account of their refusing to let him unbuckle their neck-straps. When the trainer has left them a sufficient distance behind, the assistant should, as soon as he hears the whistle, begin to loose one after another, in the order already fixed by the trainer, who directs the one he thinks most likely to run quickly to him to be first loosed, and the others according to their degrees of perfection in this very useful particular. Some dogs are very careless and independent, especially farm-reared dogs which have been accustomed to their liberty; while, on the other hand, kennel-reared dogs are uneasy unless they are with their breeder and rearer. An interval of a few seconds should intervene after each liberation, as the first dog ought scarcely to be overtaken by the second till he reaches his master, and the same with the others. The hindmost dogs exert themselves more than the leaders, because they have a double stimulus; and hence the most free should be first loosed, and the lazy ones kept back; indeed, an idle dog will hardly train in this way without one of another disposition to lead him; and even then, if he has the chance, he will stop his leader by biting him or knocking him over. The best place for a slip of this kind is an open valley, with a gradual descent on the one side, and a rise on the other. Here the assistant should remain on the hill on one side, and the trainer pass over to the other, where he is conspicuously seen and his whistle easily heard. When the trainer is anxious to give a long slip, and his space is rather limited, it answers very well for him to be on a horse or pony, and to gallop off still further, as soon as he has given the whistle and the leading dog is in good view. Sometimes half or three-quarters of a mile can thus be made available for training purposes, especially on open downs of an undulating character. One or two slips of this length will generally suffice for the first day; then walk them about for another hour and take them home. This kind of training should always be upon the same kind of ground as that over which the public courses will take place. Thus for down-courses the slips should be over hilly turf; for inclosed arable land, over fields of the same character; and for marshy land with ditches, over that species of ground.

DRESSING AND FRICTION.—After arriving at the kennel, the feet and legs should be washed and dried if dirty, and also the under parts of the body, if they require it; but if this is done, the greyhound should be rubbed with a cloth till dry. After this the whole body should be well frictioned with the horse-hair glove, of a coarser and cheaper kind than Dinneford's, now made at 2*s.* 6*d.* per pair. Lawrence's glove, which is made on the same principle as a brush (that is to say, with the ends of the hair cut and turned outwards), is better than either, and is to be purchased at prices varying from 5*s.* to 7*s.* 6*d.* per glove. This rubbing should be chiefly over the muscles of the thighs, *sides* of the back, shoulders and fore-legs, avoiding the upper surface of the back very carefully, which should never be strongly rubbed. In doing this kind of work the trainer should stride over the dog, and first face his hind-quarter while that part is being rubbed, and then turn round and look towards his head, using his two hands on corresponding parts of the animal's body at the same time.

FEEDING.—When all have had their dressing, they may have a bone apiece, which will amuse them for a while, and at about three or four o'clock they should be fed. Most trainers feed at one o'clock, because that is the usual hour of feeding when the dogs are to run the next day; but I think a some-

what later period is more convenient for all purposes, and the dogs rest better during the night in the usual way. The slight acceleration of their feeding time on the day before running is of no consequence, especially as the meal is generally lighter than usual. For dogs of the kind I am now considering (No. 1), the feeding must be lighter than for more delicate sorts; and I think that the only rule is to take off from a quarter to half a pound of their usual allowance, making the alteration chiefly in the meal, but partly in the flesh. Most people give their dogs in training bread instead of stirabout, and jelly made from cow-heel and sheep's trotters, the mode of making each of which I shall give hereafter (see page 259); but whatever the diet, it must be scanty in quantity but good in quality, and of such an amount as gradually, in conjunction with the work, to get the dog to the weight which the trainer has fixed upon as his object to be attained.

Horse-Exercise.—On the next day a horse should be provided, and the trainer should take the dogs out for at least two and a half to three hours, keeping on the turf as much as possible, and never going beyond a gentle trot on the roads, if he can anyhow obtain sufficient turf. I should not give more than half a mile twice over of galloping on this day, but should keep up a succession of trots and walks of two or three miles each during the time. This will give eight miles of walking, occupying two hours; six miles of trotting, three-quarters of an hour; and one mile at twice of galloping—making up nearly three hours altogether, and fifteen miles in distance. This distance is not too much at this pace, to begin with; and after the return home the dogs may be cleaned, dressed, and fed, as on the previous day. At this time the feet often are rather sore, and if so, they should be bathed in warm alum-water, then carefully dried, and afterwards rubbed over with pitch-ointment. The trainer should be very careful not to wear the soles of the pads too thin, as it takes some time to restore their soundness, if the horny matter is actually removed by the formation of a blister.

On the Third Day, instead of one or two slips, three or four may be given, according to circumstances and the amount of work which the trainer thinks each particular dog will bear; but, whether he has them slipped once, twice, or thrice, he should at all events keep them out for three hours, and walk them steadily, and as much as possible upon turf, where they may play as they go along as much as they please. Some dogs are playful whether at work or not; but in the majority, when they are in good work, they cease to be very playful among themselves, though still ready for mischief, and full of life and animation on returning to kennel. On all occasions after the day's work the frictioning must be had recourse to, and the feeding as usual.

On the Fourth Day the horse may be again put into requisition, increasing the pace a little, but not yet venturing upon a greater distance.

Subsequent Progress.—Thus alternately using the slipping system and the horse-exercise, at the end of the first week the dogs must be carefully weighed, and the trainer must then conclude whether he is doing enough to get them to their proper weight and condition by the time upon which he has fixed. It will generally be found that half a pound a day is the utmost which can safely be got off without physic—that is to say, in a hardy dog of the class now under consideration. If, therefore, at the end of this week a reduction of 3 lb. has not been made, it will be necessary to give physic of a more reducing nature than the jalap and aloes; Epsom salts will generally answer the purpose with least injury, and they may be given in doses varying from half an ounce to an ounce, dissolved in a teacup of warm water, with a little cream of tartar and grated ginger. This dose may be given every third morning fasting, during the second week of training; but very few dogs require more than one dose a week, and it is far better to *diminish* the supplies than to *remove* them by this severe kind of purgation. The day of rest should be chosen for administering the dose, which is worked off with slops. A very small quantity of food, about five or six ounces, is to be given at night, as the dog, if left quite empty after his clearing out, will be too weak on the next day to stand his usual work. He must now go through a repetition of the same kind of alternate horse-exercise and slipping which I before

described, and it will generally be found that he will bear his work during this week better than on the previous one, though he will perhaps lose quite as much flesh; but he will be more ready to follow the trainer, and less sore-footed and stiff than he was before. During this time, and towards the end of the second week of training, many dogs will bear cheerfully and well an amount of exercise which to some is quite incredible, and from twenty to twenty-five miles are often run over on the horse-exercise days without the least fatigue more than sufficient to make the dogs enjoy their beds. For dogs of stout blood, I should say the average is nearly twenty miles, with from two to three spirts of a mile or two on the gallop during that distance. The great difficulty is to get all the dogs to follow well, and some, though capable of bearing a great deal of work, are so lazy as to require to be led. The trainer should always take a leading-string of common broad tape, and when he finds any dog obstinately lag behind, he should dismount, and put a collar on him to which the tape is attached. In this way a dog may be compelled to move himself at whatever pace the trainer proposes, and even at a fast gallop he soon learns to follow handily and without pulling This is preferable to using the whip in the hands of a man who is to follow behind, as the dogs naturally cower with the lash at their backs, and will not go on cheerfully in the way which they ought to do. When the dogs have thus, by steady and long-continued work, varied by occasional gallops and slips, been brought at the end of the second week to a high state of efficiency in point of wind and capability of bearing fatigue, they may be weighed again, and should be a little under the weight at which they are supposed to be best capable of running. If this is the case no physic need be given on the second Sunday, but a rest-day, with slops only, will answer all the purpose. On the Monday, Tuesday, and Wednesday, the exercise should be nearly, but not quite so severe as on the previous week; and on the last three days of the third week they may be kept to walking exercise on the turf, with a single short slip each day, of only a quarter of a mile, feeding, frictioning, &c., the same as before; and on the first day of the fourth week the dogs are ready for their trials, and may indeed be considered fit to run.

Sect. 3.—Variety No. 2.

The Dog No. 2, and those of the same character, will require a very different treatment from the above, for, as I before remarked, they are incapable of bearing the same amount of work, and become dull and heavy, instead of continuing lively and fit for anything. Such dogs are often very fast for a short distance, and sometimes are so clever with it as to run little risk of being distressed with ordinary hares; but with such hares as we sometimes see in Wiltshire, Berkshire, and Scotland, they are so punished and distressed as to lose all chance for the stake for which they are entered. Nevertheless, some coursers adhere to this style of dog, and as he is often a merry, playful, and good-tempered animal, he will thus run himself into as good condition, or nearly so, as the art of man can effect. Horse-exercise to any extent is very injurious; and as he is generally fond of his trainer, and inclined to follow him, he will be more likely to be over-trained with his small amount of exercise than the more lazy dog No. 1 would be with double and treble the work. I need scarcely say that there are various shades and degrees intervening between these two types, and that the treatment in consequence must be modified accordingly.

The Amount of Work necessary for this class will be very little more than that which they themselves take, if at all playful. The weight must seldom be reduced by this means, but by physic and reduction of food. In most cases they lose flesh rapidly, and I have known six pounds got off a small bitch in four days, without destroying her form. This was done by strong physic and very little more than walking exercise. Two hours and a half of walking exercise should be given these dogs, and they should be suffered to play during that time; if they do that fully very little more will be necessary. Three times a week they should be slipped about half a mile from their trainer, as described at page 253; but not more than once or twice at farthest.

This will amply suffice for the worst and softest of these dogs; but, as I said before, according to the degree of this bad quality must the two kinds of training be combined. The trainer should always recollect that *courage* and *stoutness* are quite separate and distinct from one another, and that a very high couraged dog may be very deficient in stoutness, and in that wiryness of frame and tenacity of life which enable some to bear injuries with impunity. The high-couraged dog will bear them, as far as the pain is concerned; but on the next day he will be completely *hors de combat*, in consequence of the inflammation following them, and its effect upon his nervous system. All this must be considered by the trainer, as upon his dog's possession or otherwise of these qualities must his treatment both in training and in running be founded.

The Quantity of Physic necessary for No 2 will vary very considerably, in accordance with the degree of flesh which he carries. Some of these dogs, if drawn fine, will not run a yard, and require very little to be got off from their usual weight. A dose or two of aloes and jalap must almost always be given, as dogs are so naturally inclined to take purgatives, that they are never long in their highest form without one. These dogs may, therefore, generally have a ball, as prescribed at page 252, once a week; but they should have nothing but walking exercise on the following day.

Their food should be in larger quantity than the amount ordered for No. 1, and it should be about four-fifths of their usual allowance, if they are not very high in flesh when training is commenced. About a fortnight is ample, with two balls, for the purpose of preparing them for their private trials; and no more need be done with them than I have already advised, as to work, food, and physic.

The Frictioning, Water, &c., for these dogs should be as advised for No. 1. The feet will seldom require attention to prevent chafing or blistering, but sometimes their claws are too long, and then they should be reduced by the nail-nippers.

Sect. 4.—Variety No. 3.

The Third Kind of Dog which has been alluded to must be trained agreeably to one or other of the above modifications, according as he is able to bear work, or otherwise; and his peculiarities do not come into play until he is exhibited in public, in describing which I shall again return to his mode of treatment.

Sect. 5.—Management of the Bitch "in Season."

Her treatment, if intended to run again, should be either the natural one of allowing her to breed, without reference to the puppies, or to the artificial plan of bleeding and physicking her. It appears to me that there is a great deal of risk in both modes; as, on the one hand, the treatment in the latter case is calculated to reduce the strength of the bitch; and on the other, the breeding system often fails, from the large number of whelps which the bitch sometimes brings forth. If it was possible to limit the number of these to four or five, I believe that it would be by far the better plan to allow the bitch to indulge her natural propensity; but as this is not practicable, I think perhaps the balance is in favour of the bleeding and physicking. Many bitches have run well after breeding, and some only a few months subsequently; as, for instance, Mr. Temple's Titania, and Mr. Lawrence's Lufra; but, nevertheless, it has ruined others, who have never recovered their maiden form. By bleeding and physicking, the change which would otherwise take place in the constitution appears to be checked; there is not the same tendency to form fat, and the spirits and general health are more rapidly recruited. In this way I have known a bitch run well within eight or ten weeks after her being in season; whereas, either by simply putting her by, or by breeding from her, at least fourteen weeks must elapse before she is fit to run.

Sect. 6.—Private Trials.

The immediate preparation for the private trial should be, as nearly as may be, the same as for running in public, to which I beg my readers to refer. No mistake is greater than to try the greyhound in a different form from that which he will appear in hereafter, for it by no means follows that because he runs badly when fat, he will do the same when prepared. On

the other hand, if he runs badly in private, after a severe preparation, and it is still determined to start him, the only plan is to try what rest and light work will effect. Sometimes a dog may be tried when drawn fine, and be found to run very badly; after a week's comparative rest he may show a very different form; and if he pleases his master in every respect, the trainer should endeavour to bring him out at that weight, and in every way in the same state of condition as to work, food, &c. &c. If not quite satisfactory, another week may be suffered to elapse, and if there is such an improvement as to lead to the idea that he is quite up to his highest point, then that particular state should be fixed upon. All these delicate shades require a master-hand to decide, as it is often difficult in private to test a dog's running very satisfactorily, on account of the difficulty of procuring good hares on ground good enough without being too severe. When this can be procured, it often leads to the other extreme; and the courser is never satisfied till he has taken all the running out of the dogs.

THE NUMBER OF COURSES which a puppy should have, by way of learning his business, depends so much upon his form and breed, that no rule can be given. The courser will naturally select the small and early dogs, and the bitches in preference to large and awkward and over-grown dogs. Generally, with these forward dogs and bitches, a very few courses will make them handy enough with their game; but so much depends upon breed that no rule can be given. Much also depends upon what has been done in the spring; but no dog should be suffered to appear in public till he is quite *au fait*—that is to say, he should have had practice enough to know what he is about, and to be aware of the various devices of the hare, in the shape of short turns, wrenches, &c. Sometimes a puppy has been accustomed to short-running hares, which come back in almost all cases, and he will be sadly puzzled with a strong hare which refuses to be brought back by all the exertions he can make. Such a dog often resigns his task after two or three efforts, while the one which is accustomed to that variety of hare perseveres as long as he has any wind or strength left. On the other hand, a puppy accustomed to fast hares is all abroad with a short-running and bad hare, and will over-run himself at his turns, without attempting to come round, because he is wholly unprepared for their peculiarity of style. But, over and above this education of the puppy, there is the trial with another of the same age, or more often with a known good greyhound of the previous year. This should be merely a test of speed and of comparative working power, as the practised greyhound almost always outworks the puppy at this time of the year. But the experienced hand can draw a line, and will probably remember how that particular greyhound ran at the same age in her trial with an older competitor. All these calculations must be made on the supposition that both dogs are fit to run, for it will not do to try the puppy with an unprepared aged dog, even if he was ever so good during the previous season. Here no line could be drawn, as the unwieldy old one could or ought to be easily beaten by his more fit competitor. Not more than two courses a day should often be run in private, unless they are very short and inconclusive. If the first is of moderate length, it is better to wait for another day than to risk injury by a second course.

THE RESULTS OF THE PRIVATE TRIAL are often very melancholy, from the breeder being disappointed in his expectations. Nothing is so trying as to see a high-bred greyhound exhibit want of pace or want of courage, or any other of the essential qualities of the first-class dog. Such, however, is too often the case, and therefore the young courser must not be discouraged if such a lot falls upon him in common with his older and more experienced rivals. When we see coursers of good judgment, and of forty years' standing, fail in their attempts, and often for a series of years, it leads one to suppose that luck has a great deal to do with success. Nevertheless, in the long run, care and judgment will be served; and though it cannot with certainty be predicted that any particular litter shall turn out well, yet it is very remarkable that some men who only rear one litter a year will almost always produce some good dogs out of each litter. If the

puppy shows awkwardness, there is great hope of his still turning out well, and even if he runs a little slack, he may *perhaps* come off thus; but lurching is a trick which ought to condemn him at once, as the cunning puppy in private is sure to exhibit this propensity still more strongly when running his third or fourth course in a stake. Such, therefore, should be at once condemned to a watery grave. Wild and headstrong running is often the precursor of the best style; but such dogs require a good deal of practice, and should even see a hare within a few days of their public performance. When the kennel is large enough to admit of running the risk, I think a trial on the third or fourth day before the stake is commenced will always do good, especially in Wiltshire, or any other severe country, as it is impossible to extend the greyhound to the same wiry degree by any other means. His wind is thereby perfected, and he is also practised in turning, which brings very different muscles into play to those which are used in straightforward galloping. But if the kennel is only composed of such a number of dogs as are wanted in public, it is dangerous to put them down to run a course nearer than ten days from the time of the meeting in which they are to be engaged. The sketch of a private trial given on page 200 shows the awkwardness of the puppy, which afterwards turned out to be "a clipper," and the difficulty of getting a satisfactory slip in the early part of the season. The scene is Croome Park, in Worcestershire.

Sect. 7.—Treatment after the Trial.

This should be of a quieting and cooling description. A ball of aloes, &c. (page 252), should be given, or if the dog is very lusty, the salts, &c., as advised in page 254. After this has operated, but not till the following day, give a meal of potatoes mixed with the bread, or a very few greens, in order to freshen up the stomach, and prepare it for its final effort. If the dog has not been long accustomed to flesh, he will often train-off at this time, if that kind of food is continued, and therefore he should be for some four or five days without it, using only jelly, with a little broth, to flavour the meals; but if he has been reared upon the principles advocated by myself he will bear its continuance well, by using the precaution to give the vegetable diet above mentioned. With these remarks I shall proceed in the next chapter to the final preparation for running, and to that ordeal itself.

CHAPTER VII.

TRAINING, FINAL PREPARATION, AND RUNNING.

Sect. 1.—Final Preparation.

The First Two Classes I have already alluded to, as requiring very different training; and the third will hereafter be found to demand greater care than usual at the time of running. There are also various states of constitution which interfere with training, such as the effects of the "heat" with the bitch, excessive grossness of constitution aggravated by long rest, &c., which must be met by appropriate treatment; but the ordinary greyhound, irrespective of these accidental complications, must be treated on some modification of the two types described in the last chapter, and by that mode will have been brought up to such a mark as to enable his master to try him with some chance of judging of his powers. I have already remarked, that at this time the trainer not only comes to a conclusion as to his actual capabilities when quite fit, but also as to his present "form;" that is to say, he judges whether he is too much or too little worked, and also whether he is too light or too heavy. Having, however, settled all this to his satisfaction, and finished his trials, he has let his dog down for a few days, as shown in the last paragraph; and the next thing is to bring his recently-gained experience as to all the capacities of the dog to a practical result, by concluding his training during the interval of a fortnight or three weeks

before the meeting at which he is to run, and till then he may alter his plans according to the experience which he has gained.

BOTH THE DOGS Nos. 1 AND 2 will again require exactly the same routine of exercise, feeding, frictioning, &c., as before, unless the trainer, from the running in these trials, sees reason to vary it. He should give them severe work, and proportionally light food during the first week, and then gradually diminish the former, and increase the latter, up to the fourth day before the day of running. During this time the dogs should have been kept almost entirely off the road, so that the horny covering of the sole of the foot may have had time to grow, and thus often save it from the sharp edges of flints which abound in some countries, and easily penetrate a thin, worn-out sole.

On the fourth night before running, I should advise a mild aperient, believing that it does not weaken the dog, but, on the other hand, that it freshens his stomach, improves his wind, and makes him lively and full of energy. Some coursers at this time give an emetic, and I have known very good results follow its use, where the liver is sluggish, or the dog is what is called "bilious;" but otherwise I think the simple aperient ball (page 252), or a dose of castor-oil, will answer the purpose better. From this time the same management will suit both kinds of dogs, to which, on the third day before running, walking exercise only should be given for at least four hours, feeding as before. On the second day, the same amount of walking exercise, with one or two slips of half a mile each. At this time the dogs similar to No. 1 are generally recovering fast from their severe work, and are, or ought to be, as well as No. 2, very fresh and full of play, which they should all be indulged in, using the muzzle if they are inclined to be spiteful. On the day before the final struggle, the dogs should be walked out for three hours, with a single slip of half a mile, to open their pipes; then home and well frictioned; and afterwards fed at one o'clock, on not more than three-quarters of a pound of mutton toasted before the fire, and, after being cut up, mixed with the same quantity of bread soaked in melted jelly. The dogs may then rest till the next morning, though many trainers take them out for a short walk in the evening; but I do not believe it is a good plan, unless they are intended to be lightly fed before running the next day. The following receipts and rules will conclude this part of the subject.

FOR MAKING BREAD WITHOUT BARM, which sometimes agrees with the stomach better than bread made with it—take of

Flour, 12 lbs.
Bicarbonate of soda, 2 oz.

Mix them well together with the hands; then take of

Muriatic acid, 2 oz.
Water, 8 pints.

Mix well together, and then stir the acidulated water quickly into the flour with a large wooden spoon. The dough thus formed should be quickly put into common earthern flower-pots, filling them about two-thirds full, and baked without delay, in a quick oven, *rather hotter than for common bread.* The flour may be of wheat alone, or mixed with oatmeal, according to the habit of the dog.

TO MAKE JELLY FOR TRAINING.—Procure four cow-heels, *unboiled*, and two-score of sheep's trotters; scald them, and scrape off the hair and hoofs. Then put them in a digester, and boil gently till they tumble to pieces, covering them with such a quantity of water as will just serve to float them. After they are quite tender, let the whole cool, then pull them to pieces and take out the bones, after which they should be again gently simmered for an hour, adding a little more water. The whole is then put by, and forms a thick jelly, which in winter will keep four or five days, but in October and March will often become sour in thirty-six or forty-eight hours.

VARIOUS MODES OF DRESSING THE MEAT:—

1.—HORSE-FLESH is usually boiled, but if sound and of good quality, it makes good steaks, even in training, and should be toasted before the fire, or fried in the ordinary way, or grilled on a gridiron.

2.—BEEF is best toasted, or fried, or broiled, and it should be well beaten with a rolling-pin before being dressed, in order to insure its tenderness. Horseflesh usually is much more short and tender, and when good, is superior to beef, in

all respects. The fat should be removed from both.

3.—Mutton is certainly the best kind of animal food for training purposes. The part used should be the leg, which is the only joint from which a solid mass can be obtained free from fat. It may be broiled or toasted in the usual way. The reason for the preference of these modes to boiling is, that as dogs are seldom indulged in them, from their being more troublesome, they are relished better, and appear to give tone to the stomach. Boiled meat, with the broth, is quite as nourishing as when broiled or toasted, but it is not convenient to give the broth in the latter days of training, so the bread is soaked in jelly instead; and as the boiled flesh alone is not good, the above modes are to be preferred.

4.—Either of the above should be chopped into fine pieces, and put into a saucepan, with sufficient *boiling* water to cover them. Then set on the fire and just boil up, carefully stirring, to prevent burning.

Short Rules for Training.

1.—Give no more physic than just enough to freshen the stomach, unless it is wanted as a means of reduction.

2.—When used in this way, try mild physic before giving stronger.

3.—Give as little bread as will suffice for health. The quality may be known by the colour of the *fæces*, which ought to continue of a good gingerbread colour, and which become black, or nearly so, when the flesh is overdone.

4.—Reduce the dog more by increase of work, and reduction of food, than by physic.

5.—Give as much horse-exercise as the stoutness of the dog will enable him to bear, without over-doing him.

6.—Use plenty of friction.

Sect. 2.—Travelling.

Railways afford great facilities to the courser, and the dogs may now be conveyed two hundred miles more easily than they could be travelled forty on the road before the present system came into vogue. If possible, the trainer should have his greyhounds with him in the railway carriage, as they are much more nervous and excited when removed from his presence. In most cases a second or third class compartment may be obtained for the trainer and dogs; but if not, the luggage-van is better than the boxes in which dogs are ordered to be placed on most of the lines. A horse-box may generally be procured by giving notice, if there are enough dogs to occupy it; and nothing can be better than this. It is astonishing what a difference is made by attention to these trifling particulars. Some people prefer arriving at the place of meeting a little while before the day of running—that is, ten days or a fortnight; and I think, if it is a healthy place, and there is good training-ground near, that is the best plan; but if ten days cannot be given up, it is better to allow only one clear day's rest, as dogs often get more unsettled after a week than they are at the end of two days, and consequently they begin their contest at their worst, instead of being at their best. If they can be slowly travelled with a dog-cart, and exercised as they go along, a clear day is scarcely necessary, if the dogs are hardy; and it is quite time enough to get into the new quarters by twelve o'clock on the day before running, so as to feed at one. But as the average of dogs seldom sleep quite so well in a strange place, this is, perhaps, not to be recommended as the ordinary rule.

Sect. 3.—Management at Meeting.

The Amount of Exercise required during the progress of the meeting is not very great, as the courses run will generally be sufficient. About an hour or an hour and a half will be required to give time for the dogs to empty themselves. They should be lead out with their clothing on, and, when the trainer can find a quiet field where there is no chance of a hare getting up, they may be loosened for a few minutes' play. Those dogs which are going to run on that day should have muzzles on, for fear of picking up bones or refuse of any kind, which precaution also serves to guard against wilful poisoning. After this they may be walked home, and well frictioned and dressed for half an hour each dog.

No Food should be given if the course is likely to take place by twelve or one o'clock; but if later than that, about one or two ounces of mutton and one of bread or toast will serve to keep up

the tone of the system, which is lowered by excessive starvation. If more than one course is run, and the first is a severe one, a ball of mutton, spiced according to the following formula, or a simple spiced ball, should be given about a quarter of an hour before the next course, with a mouthful of weak whisky-and-water, or brandy-and-water:—

SPICED-MEAT BALL.

Take of Caraway seeds, 10 grains.
Cardamoms, 10 grains.
Grains of Paradise, 5 grains.
Ginger, 5 grains.
Lean boiled knuckle of mutton, ½oz.

Bruise the seeds in a mortar, and then mix with the mutton, and form it into a ball.

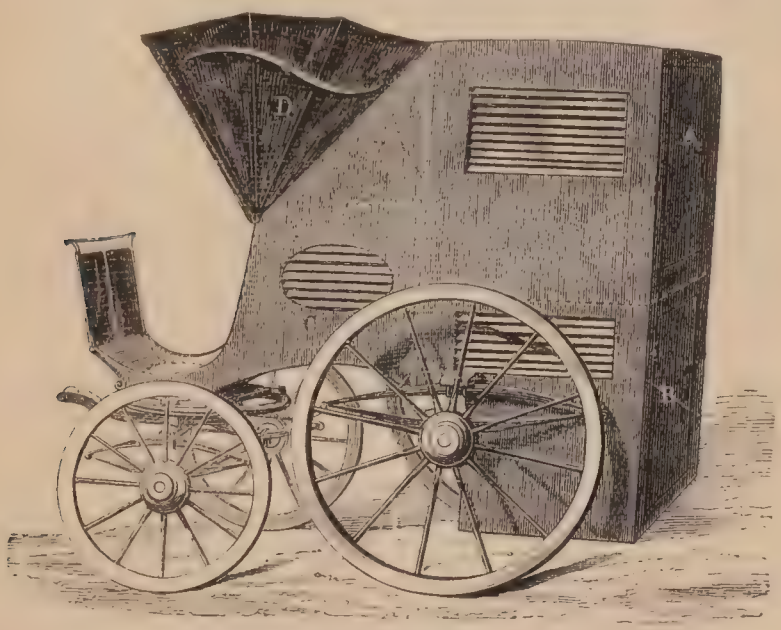
COMMON CORDIAL-BALL.

Take of Cummin seeds, 10 grains.
Coriander seeds, 10 grains.
Caraway seeds, 10 grains.
Grains of Paradise, 10 grains.
Saffron, 1 drachm.
Syrup, enough to form a ball.

Bruise in a mortar and mix well together; then make up into a ball.

EGGED-WINE is a very common remedy, but I believe it is very inferior to brandy-and-water alone, and certainly not equal to the spiced meat-ball, which I have seen effect wonders in many cases.

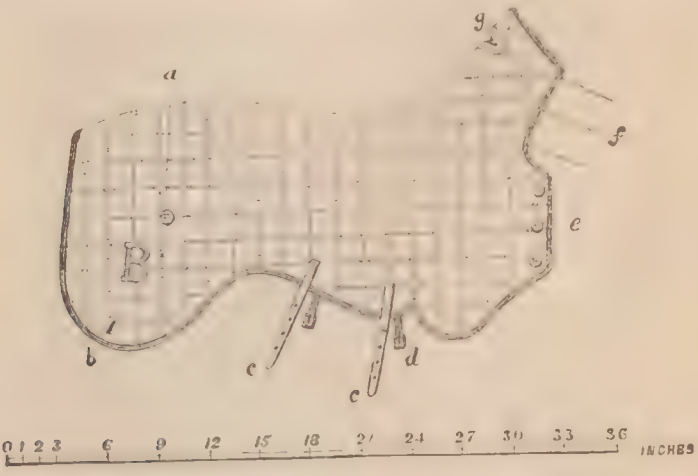
As soon as the dog can be taken to his kennel after his course, he should be fed, in preparation for the morrow, on the same quantity and quality of food as before.



A DOG-CART, if possible, should be used on the ground; but if the distance is not more than two or three miles, and the weather is fine, the dogs are much better kept out till after they have run; but it is *after* the course that the cart is so useful, as the dogs may then rest quietly till taken home; and if they are detained very late, they may be fed on the ground, if the trainer has taken the precaution to bring the food out with him. Hardy dogs bear this well, but delicate ones sometimes are made sick by riding in a cart on a full stomach. The dog-cart of which a plan is given above will be found to be very useful, and will accommodate eight or nine dogs very well—viz., four in the compartment A, three in B, and one or two in C; the dotted lines show the divisions between the three compartments. The head, D, may be made to let down partially, for convenience of seeing on the ground; and the compartment A ought to have a door opening into the interior, so that the trainer may take out or put in a dog without subjecting him to the weather. By this plan he may strip and rub him, &c., under cover, and keep him there till he is ready to take him to the slips. Such a dog-cart ought to weigh nearly 7 cwt., and cost from

25*l.* to 45*l.*, according to the materials and finish.

When the Trainer, who has his card in hand, finds that he will soon be wanted, he should get his dog ready, and give him a good frictioning. If he has already run, he should treat him according to the rules laid down in the preceding page; and when his turn comes he should take him to the slips, keeping him walking about for a quarter of an hour, if the weather is not unfavourable. When the dog is put in the slips, the trainer should take care that he is on his right side, and, if necessary, that he has his collar on. If the weather is cold, or wet, the cloth should be kept on as long as possible, and for that purpose it should button across the breast. These particular patterns are called "slip cloths:" *a b*, button and hole, to loop up the cloth when the roads are very dirty; *c c*, belly-straps; *d*, a slit, to allow of the cloth hanging smoothly down over the arm; *e*, three buttons for closing the front over the breast; *f*, three strings for closing the throat; *g*, a slit, guarded by leather, for allowing the leading-rein to appear. If the dog is young and uneasy, the trainer should walk by his side, and stop his pulling if inclined that way; or if he is inclined to hang back, he should be ready to prevent his getting twisted, or to put him right if such an event happens. He should have an assistant mounted, if in an open country, to pick his dog up, or if inclosed, he should have one, two, or three, posted



at the most likely coverts which the hares make for. By these precautions the dog is prevented from getting a second course, which often destroys the chance of a good dog after he has won his first.

The Accessories which should be taken in the dog-cart are—Spiced-meat balls, brandy or whisky, waterproof clothing, and spare cloths for dogs, muzzles in case they fight, leading-straps, sponge, cold water, food in tin cases, bluestone, Canada balsam spread on leather for wounds, needles and thread, bandages, lancet, tincture of arnica, and Friar's balsam.

External Restorations are of two kinds—those which can be used in the field, and those which may be applied in the kennel. Of the former, friction with whisky is the best. The hand should be applied well for some little time in the ordinary way, then a little whisky should be rubbed in, and finally a good deal should be rubbed rapidly on, taking care to choose a perfectly sheltered place, and clothing the dog warmly at once before the spirit has had time to evaporate. When the dog is much distressed by his work and is panting severely, with blueness of the mouth, and redness of the eyes, take about four to eight ounces of blood, and use the whisky as above. After a short time, when the blueness abates, give the spiced-meat ball and a little brandy-and-water. If the dog's work has been very severe, a warm bath at 98 degrees of Fahrenheit is the best restorative. He should be immersed in it up to the neck for fifteen minutes; then take him out, dry him well before a good fire, and afterwards rub him all over the body with hot whisky. He

should be clothed before the latter is quite dry and left to take his rest. The best time for the warm-bath is about three hours after the feeding-time.

THE WATER given at the meeting should all be boiled and cooled, as in this way the effect on the stomach of a change in the fluid is greatly diminished.

SECT. 4.—TREATMENT OF INJURIES, &c.

When the dog described as No. 1 (page 250) is punished either by work or injuries, he may be suffered to try his best, and will often pull through. The dog No. 2 will also often bear injuries for one day, but will generally feel their effect very acutely on the following one, and must then be drawn, if he is ever to be of use hereafter, as he does not often try his best after being thus severely tested. The dog No. 3 had better, in any case, be drawn at once, if he is either severely worked, or bruised by a fall or cut, or has his nails broken or stripped. By nursing him in this way, he may at some time do good; but if liberties are taken with him, he will neither win on that day nor on any future one. By attention to these various indications, and carefully studying the powers, constitutions, temperaments, and habits of his dogs, the trainer is enabled to call out all the good, and prevent the appearance of the bad qualities of his charge. Herein the really useful man is shown; and by this careful study many middling kennels have been made "to do the right thing at the right time." On the other hand, by a neglect of them, many a good dog in some countries has been taken to others for which he was unfit, and sacrificed to the ignorance or infatuation of his trainer or master.

CUTS ON THE LEGS are best managed by fixing on the adjacent skin a piece of white kid leather, spread with Canada balsam by means of a warm knife. This answers better than anything I have ever seen tried, and it agrees well with the dog's flesh. The balsam is very adhesive, and even the dog's tongue fails to remove it. It must be heated first before applying.

WHERE A LARGE PIECE OF SKIN is loosely hanging, as is often the case in inclosed countries, the flap must be held in its place by a suture. The plan is to pass a needle, armed with a strong thread, through the corresponding sides of the wound, at intervals of half an inch, then to tie each stitch separately, and cut the ends of the thread off, but not too closely. The Canada balsam over this makes it very secure, if the cut is on the head or the ribs; but it cannot well be applied without a firm foundation, such as those parts afford.

IF A STOPPER is detached from the leg, so as to be quite loose, it is far better to remove the hanging portion with the knife, and apply a bandage, with some Friar's balsam. Just before running, the raw surface must be rubbed with bluestone, which deadens the soreness, and prevents the dog from feeling the contact of the ground. Over the whole cut surface a piece of leather, spread with the Canada balsam, may be strained, and made to meet in front, so as to encircle the leg.

WHEN A CLAW is broken, the ragged bits should be carefully removed with nail-scissors, and a little Friar's balsam applied. On the day of running, about an hour or two before going to slips, take a piece of bluestone, and rub well over the quick which is exposed. A piece of lunar caustic answers better; but it requires great care in it use.

CUTS IN THE SOLE of the foot are best treated by a small patch of leather spread with the Canada balsam, which adheres very closely, if properly applied. A little bluestone, previously rubbed in, dries up the surface, and renders it less sensible to pain.

BRUISES ON THE LEGS, or elsewhere, are relieved by warm fomentations, followed by a lotion composed of a teaspoonful of tincture of arnica in half a pint of water, with which they should be kept constantly wet.

AFTER THE MEETING is over, the dog should be given a dose of physic, and a few potatoes or greens, according to his health.

SECT. 5.—EXPENSES OF REARING AND TRAINING.

Yearly cost of brood-bitch .	£5	0	0
Stallion, and travelling . .	8	8	0
Licence for bitch	0	5	0
Keep of ditto	3	10	0
Keep of six puppies, at 1*s.* 6*d.* per week till eighteen months old	35	2	0
Carried forward . .	52	5	0

Brought forward.	£52	5	0
Tax on ditto after six months	1	10	0
	6) 53	15	0

Cost of each puppy, £9—nearly. Thus reckoning the brood-bitch to cost 20*l.* and to last four years, and calculating on six puppies from each litter, the mere keep of greyhound puppies, without extra charge for kennels or attendance, will make them cost about 9*l.* each, at eighteen months of age. Add to this the wages of trainer and travelling expenses, with stakes, &c., and it will be clear that our large kennels cost no inconsiderable sum.

CHAPTER VIII.

MANAGEMENT OF COURSING MEETINGS.

Sect. 1.—Origin of Meetings.

Coursing Clubs form one chief source of coursing meetings, and were, until about thirty years ago, the sole causes of public contests between greyhounds. For many years coursing clubs have existed, and some time before the present century the oldest of them, held at Swaffham, was instituted. At that time the sport was confined to those who could gain admittance to this and some one or two other select clubs, and the day of open champion meetings had not yet dawned. The chief clubs now in existence are the South of England, Burton-upon-Trent, Quex Park, East Sussex, South Essex, Watford, Mere Down, and Worcester in the south; in the north, the Altcar and Ridgway clubs take the precedence, but of late the Coquetdale, Bothal, North of England, and Three Counties clubs, have held important meetings; and Scotland has its National Club, as well as its Dirleton, Border, Ardrossan, Wigtownshire, Aberdeenshire, West Teviotdale, and Perthshire meetings, all of great public interest. These clubs have all of them more or less ground to course over, which they hold either by a rental, or by the favour of the owners of the property. In some cases—as at Ashdown Park, Altcar, Lytham, Amesbury—the proprietors of the property over whose land the coursing takes place, not only permit the club to hold regular meetings, but pay all the expenses of preserving; whilst in others the club has to pay for preserving, as well as to give a rent for the manor. The latter is the usual plan in Scotland; and but for the existence of clubs, few large meetings could be held in that country.

Open Meetings are often originated by clubs which are anxious to try their strength in competition with their neighbours; in which case they throw their ground open to all coursers, instead of limiting their entries to members of their own body. More frequently, however, they are held for the benefit of some particular innkeeper, who is the tenant or an old servant of the lord of the manor, and who has permission to use the lands of his patron for the purposes of an open meeting. In the former case the meeting is under the control of the members of the club, but in the latter it is generally managed by the innkeeper himself—as was formerly done at the Waterloo Meeting and still is at Southport—or by some person who is constituted a secretary by general accord, or by the consent of the patron, as at Ashdown, and who arranges all the proceedings, without any control but that of public opinion. Here, however, it is found that this control is sufficient, because if he does not give satisfaction his entries will not fill. The chief open meetings are the Ashdown, Newmarket, Brigg, Beckhampton, Blankney, and Barton-upon-Humber, in the south; the Waterloo, Southport, Border Union, Scarborough, Ripon, Rufford, Tarleton, Sundorne, Brampton, and Coquetdale in the north; while the Lurgan open meeting, in Ireland, has become exceedingly popular. Scotland has no

open meeting pure and simple, but there are several important open stakes at the Scottish National and other club meetings.

A COMMITTEE OF MANAGEMENT should be formed in any case, who should meet and decide upon the election of the judge and slipper, the stakes to be run for, and their appointment, and the rules which shall guide the meeting. All disputed questions to be decided by vote, and the chairman, in case of an even number, to have the casting-vote.

THE ELECTION OF JUDGE either to rest with the committee, in which case it should be published with the advertisements giving notice of the meeting, or else it should be vested in the general subscribers to the stakes, each of whom should have one vote.

The secretary to draw up, with the approbation of the committee, a programme of the meeting, which should be advertised, and should specify—

1st—The date of the meeting.
2nd—The names of the stakes.
3rd—The qualification for ditto.
4th—The entries for ditto.
5th—The apportionment of ditto.
6th—The expenses to be deducted.
7th—To whom applications are to be made for entries.
8th—The time and place of entry and drawing.
9th—The rules to regulate the meeting.
10th—The judge, if named, or, if not, the mode of election to be stated.
11th—The names of the committee.
12th—The secretary's signature.

THE DRAW should be conducted on the following plan: first, the money for each stake should be paid to the secretary by the subscribers; secondly, after this is completed, small squares of paper, exactly like each other, should be handed round, and each subscriber should, either himself or by his deputy, write the name of his dog, with the pedigree, colour, and age, upon one of them; after which they are folded up. The secretary then collects these for each stake in succession, placing them at once in a hat, from which they should be drawn in regular order, and entered as they are drawn. Nothing can be more simple than this plan, and it does away with all necessity for numbered cards, &c., which are the source of constant confusion and mistakes. It also facilitates guarding, and prevents all hanging back to see what dogs are entered, which is not conductive to fair and large entries. It was introduced in the "Directions for the Management of Meetings" published by Mr. Welsh, in his eighth volume of the "Courser's Remembrancer," but it has not been commonly acted on, and I was not aware of its existence until reminded by that gentleman.

THE DUTIES OF THE FLAG-STEWARD are to receive the fiat of the judge, and see that the flagman hoists the right flag (red or white for the left or right side of the card respectively, and *both* for undecided courses).

THE SLIP-STEWARD, if there is one, regulates the proceedings of the dogs at the slips, and sees that the next brace is ready.

THE FIELD-STEWARDS regulate the beating and the general proceedings of the field. They should have one or two flagmen, with blue flags, who should always be in sight of the beaters, and should restrain the progress of the crowd beyond their own boundary. The field-stewards should also see to the beaters, with the assistance of the secretary, who is usually one of their number.

THE RULES FOR THE GUIDANCE of meetings are of great importance to their success. Mr. Welsh's rules were usually acted on until the National Coursing Club, on its establishment in 1858, determined to draw up a new code. Under the presidency of the celebrated courser known as "Mr. C. Jardine," a set of new rules was drawn up by that gentleman, with the aid of a small committee, and received the sanction of the club at the next meeting, and of the whole coursing world since. A few alterations were from time to time made in the original rules, and they continued with little alteration till the Spring Meeting of 1863, when a select committee of three, consisting of the Earl of Sefton, Mr. C. Jardine, and myself, were appointed to revise Mr. Thacker's rules for the decision of courses. We accordingly proceeded to our task, and the result was that a simplified code was drawn up, and passed at the following Summer Meeting in London in 1863. In 1869 another revision took place through the

agency of a select committee presided over by Mr. Randell. The result was the code of rules which is given hereafter, and which took effect from Sept. 1, 1870. It is useless to record all the doings of the club at their several meetings since 1858, but their decisions in cases submitted to them being of the nature of precedents, should be preserved, and I have accordingly collected them in my book "The Greyhound," to which I must refer my readers who require the information.

Sect. 2.—Constitution and Bye-Laws of the National Coursing Club.

The National Coursing Club shall be composed of members elected by the coursing clubs of the United Kingdom, of more than one year's standing, and having not less than twenty-four members each. No club shall have more than two representatives. The National Club shall annually, on the day of entry for the Waterloo Cup, elect two of its members as president and secretary. At all its meetings seven shall be a quorum.

Ten members shall retire annually in the regular rotation of their clubs; and the secretary shall, not later than the 1st of September in each year, give notice to those clubs whose turn it is to elect representatives. Returns of the various representatives so elected shall be sent to the secretary before the 1st of January in each year. Casual vacancies in the representation of clubs shall be filled up by those clubs respectively.

Clubs desirous of joining the National Club must send evidence of their qualification to the secretary. All clubs having joined must contribute their *quota* towards the expenses, and any club failing so to do will be disqualified for returning members to the National Club. At the Summer Meeting, in every year, a statement of expenses shall be submitted by the secretary, and the subscription to be required from each club shall be settled.

Every coursing meeting shall, unless the contrary be declared by the programme of an open meeting or by club rules, be subject to all the rules and regulations of the National Club. Every question or matter in dispute connected with coursing can be brought before the National Club for its decision.

It shall always be in the discretion of a meeting of the National Club, if it thinks fit, to refer the examination of any case brought before the club to a committee of not less than three of its members. Every such committee shall make a written report to the secretary, to be laid before the club for its decision.

Every decision of the club shall be final, unless either party, within six months, shall apply for a rehearing, on the ground that evidence will be adduced which was not procurable at the previous hearing; and the club may order that the expenses attending any second inquiry shall be borne by the party seeking it, together with such costs incurred by the adverse party as the club shall award. The secretary shall place on record and publish every case brought before the club.

Meetings for the despatch of business, and for the revision or alteration of rules, shall be held in London on the Thursday of the Derby week, at 11 A.M., and at Liverpool on the day of entry for the Waterloo Cup, at 1.30 P.M., and the secretary, upon a requisition addressed to him in writing by any three stewards of a meeting, or by six public coursers, members of an established club, may summon a special meeting, at such time and place as the president may appoint.

A month's notice must be given to the secretary of any business or proposed alteration of rules before it can be discussed at an ordinary meeting of the National Club; and at any special meeting nothing but the particular question for which that meeting has been convened can be entertained.

Code of Rules.

1. Secretary and Stewards.—The secretary of any proposed open meeting shall associate with himself a committee of not less than three members, to settle preliminaries. The management of the meeting shall be intrusted to this committee, in conjunction with stewards who shall be elected by the subscribers present the first evening of a meeting. The stewards alone shall decide any disputed question by a majority of those present, subject to an appeal to the National Club. The

secretary, if honorary, shall be a member of committee and a steward *ex officio*. No steward shall have a right to vote during a meeting in any case relating to his own dogs. The secretary shall declare, as soon as possible, how the prizes are to be divided; and shall give a statement of expenses, if called upon to do so, within fourteen days after the meetings, by any six of the subscribers.

2. Election of Judge.—The judge may either be elected by the secretary and committee appointed under Rule 1, in which case his name shall be announced simultaneously with the meeting, or his appointment shall be determined by the votes of the subscribers taking nominations; but each subscriber shall have only one vote, whatever the number of his nominations. Not less than ten days' notice of the day of election shall be given to the subscribers, and the appointment shall be published at least a fortnight before the meeting. The names of the subscribers voting, with the votes given by them, shall be recorded in a book open to the inspection of the stewards, who shall declare the number of votes for each judge, if called upon to do so by any of the subscribers. When a judge is prevented from attending or finishing a meeting, the committee and stewards (if appointed) shall have the power of deciding what is to be done.

3. Description of Entry.—Every subscriber to a stake must name his dog at or before the entry, giving the names (the running names if they had any) of the sire and dam of the dog entered, and also in puppy stakes the name of the dam's owner. The secretary shall publish on the cards the names of those who are subscribers but do not comply with these conditions. These nominations shall not be drawn, but must be paid for. For produce stakes the names, pedigrees, ages, and colours, and distinguishing marks of puppies, shall be detailed in writing to the secretary of a meeting at the time of entry. Every subscriber must also, if required, state in writing to the secretary, before or during the meeting for which such entry is made, the names and addresses of the parties who reared his puppies; and any puppy whose marks and pedigree shall be proved not to correspond with the entry given shall be disqualified, and the whole of its stakes or winnings forfeited. No greyhound is to be considered a puppy which was whelped before the 1st of January of the year preceding the commencement of the season of running. A sapling is a greyhound whelped on or after the 1st of January of the same year in which the season of running commenced.

4. Payment of Stakes.—All moneys due for nominations taken must be paid at or before the entry, whether the stakes fill or not, and although, from insufficient description or any other cause, the dogs named may be disqualified. No entry shall be valid unless the amount due for it has been paid in full. For all produce and other stakes where a forfeit is payable no declaration is necessary; the non-payment of the remainder of the entry money at the time fixed for that purpose is to be considered a declaration of forfeit. The secretary is to be responsible for the entry money of all dogs whose names appear upon the card.

5. Alteration of Name.—If any subscriber should enter a greyhound by a different name from that in which it shall have last run in public, he shall give notice of the alteration to the secretary at the time of entry, and the secretary shall place on the card both the late and the present names of the dog. If notice of the alteration be not given, the dog shall be disqualified.

6. Prefix of "Ns."—Any subscriber taking an entry in a stake, and not prefixing the word "*Names*" to a greyhound which is not his own property, shall forfeit that greyhound's chance of the stake. He shall likewise, if requested, deliver in writing to the secretary of the meeting the name of the *bonâ fide* owner of the greyhound named by him, and this communication is to be produced should any dispute arise in the matter.

7. Death of a Subscriber.—The death of a subscriber shall only affect his nominations if it occur before the draw, in which case they shall be void, subject to the exceptions stated below, whether the entries have been made or not, and any money received for forfeits or stakes shall be returned. If he has parted with all interest in the nominations, and dogs not his property are entered, paid for, and drawn in ignorance of his being no longer alive,

such entries shall not subsequently be disturbed. When dogs entered in produce stakes are sold with their engagements, the new owner shall be entitled to run them, notwithstanding the death of the original nominator, provided the forfeits have been paid.

8. Draw.—Immediately before the greyhounds are drawn at any meeting, and before nine o'clock on every subsequent evening during the continuance of such meeting, the time and place of putting the first brace of dogs into the slips on the following morning shall be declared. A card or counter bearing a corresponding number shall be assigned to each entry. These numbered cards or counters shall then be placed together, and drawn indiscriminately. This classification once made shall not be disturbed throughout the meeting, except for the purpose of guarding or on account of byes. Dogs whose position on the card has been altered in consequence of guarding or of byes must return to their original position in the next round if guarding does not prevent it.

9. Guarding.—When more than one nomination in a stake is taken in one name, the greyhounds, if *bonâ fide* the property of the same owner, shall be guarded throughout; this is always to be arranged, as far as possible, by bringing up dogs from below to meet those which are to be guarded. This guarding is not, however, to deprive any dog of a natural bye to which he may be entitled, either in the draw or in running through the stake.

10. Byes.—A natural bye shall be given to the lowest available dog in each round. No dog shall run a second such bye in any stake, unless it is unavoidable. When a dog is entitled to a bye, either natural or accidental, his owner or nominator may run any greyhound he pleases to assist in the course, provided always that in sapling stakes only a sapling may be used, and in puppy stakes none older than a puppy. But if it is proved to the satisfaction of the stewards that no puppy can be found in time to run an accidental bye, the owner shall have the power of substituting an old dog. No dog shall run any bye earlier than his position on the card entitles him to do. The judge shall decide whether enough has been done to constitute a course, or whether it must be run again. If at the commencement of any round in a stake one dog in each course of that round has a bye, those byes shall not be run, but the dogs shall take their places for the next round as if the byes had been run.

11. Postponement of Meeting.—A meeting appointed to take place on a certain day may, if a majority of the committee and stewards (if appointed) consider the weather unfit for coursing, be postponed from day to day; but if the running does not commence within the current week, all nominations shall be void, and the expenses shall be paid by the subscribers in proportion to the number of nominations taken by each. This rule shall not apply to produce meetings, which must take place as soon as the weather will permit; the original entries to stand good.

12. Taking Dogs to the Slips.—Every dog must be brought to the slips in its proper turn, *without delay*, under a penalty of 1*l*. *If absent for more than ten minutes* (according to the report of any one of the stewards), its opponent shall be entitled to claim the course, and shall in that case run a bye. If both dogs be absent at the expiration of ten minutes, the stewards shall have power to disqualify both dogs, or to fine their owners any sum not exceeding 5*l*. each. No dog shall be put into the slips for a deciding course until thirty minutes after its course in the previous round, without the consent of its owner.

13. Control of Dogs in Slips.—The control of all matters connected with slipping the greyhounds shall rest with the stewards of a meeting. Owners or servants, after delivering their dogs into the hands of the slipper, may follow close after them, but not so as to inconvenience the slipper, or in any way interfere with the dogs, under a penalty of 1*l*. Neither must they halloa them on while running, under the same penalty. Any greyhound found to be beyond control, and mischievous in slips, may, by command of the stewards, be taken out of the slips and disqualified.

14. Greyhounds of Same Colour to wear Collars.—When two greyhounds drawn together are of the same colour they shall then each wear a collar, and the owners shall be subject to a penalty of 10*s*. for non-observance of this rule; the colour of the collar to be red for the left-hand side, and white

for the right-hand side of the slips. After the first round, the upper dog on the card for the day will be placed on the left-hand, and the lower dog on the right-hand of the slips.

15. The order to slip may be given by the judge, or by a slip steward, or the stewards of a meeting may leave the slip to the sole discretion of the slipper. The length of slip must necessarily vary with the nature of the ground, but should never be less than from three to four score yards, and must be maintained of one uniform length, as far as possible, throughout each stake.

16. THE SLIPPER.—If one greyhound gets out of the slips, the slipper shall not let the other go. In any case of slips breaking, and either or both dogs getting away in consequence, the slipper may be fined not exceeding 1*l.*, at the discretion of the stewards.

17. The judge shall be subject to the general rules which may be established by the National Coursing Club for his guidance. He shall, on the termination of a course, immediately deliver his decision aloud, and shall not recall or reverse his decision on any pretext whatever after it has been declared; but no decision shall be delivered until the judge is perfectly satisfied that the course has absolutely terminated.

18. He shall decide all courses upon the one uniform principle that the greyhound which does most towards killing the hare during the continuance of the course is to be declared the winner. The principle is to be carried out by estimating the value of the work done by each greyhound, as seen by the judge, upon a balance of points according to the scale hereafter laid down, from which also are to be deducted certain specified allowances and penalties.

19. The Points of the Course are:

a. Speed—which shall be estimated as one, two, or three points, according to the degree of superiority shown. [See Definition of Points below (*a*).]

b. The Go-bye.—Two points, or, if gained on the outer circle, three points.

c. The Turn.—One point.

d. The Wrench.—Half a point.

e. The Kill.—Two points, or, in a descending scale, in proportion to the degree of merit displayed in that kill, which may be of no value.

f. The Trip.—One point.

DEFINITION OF POINTS.

a. In estimating the value of speed to the hare the judge must take into account the several forms in which it may be displayed, viz:—

1. Where in the run-up a clear lead is gained by one of the dogs, in which case one, two, or three points may be given according to the length of lead, apart from the score for a turn or wrench. In awarding these points the judge shall take into consideration the merit of a lead obtained by a dog which has lost ground at the start, either from being unsighted or from a bad slip, or which has had to run the outer circle.

2. Where one greyhound leads the other so long as the hare runs straight, but loses the lead from her bending round decidedly in favour of the slower dog of her own accord, in which case the one greyhound shall score one point for the speed shown, and the other dog score one point for the first turn.

3. Under no circumstances is speed without subsequent work to be allowed to decide a course, except where great superiority is shown by one greyhound over another in a long lead to covert.

If a dog, after gaining the first six points, still keeps possession of the hare by superior speed, he shall have double the prescribed allowance for the subsequent points made before his opponent begins to score.

b. The Go-bye is where a greyhound starts a clear length behind his opponent, and yet passes him in a straight run, and gets a clear length before him.

c. The Turn is where the hare is brought round at not less than a right angle from her previous line.

d. The Wrench is where the hare is bent from her line at less than a right angle; but where she only leaves her line to suit herself, and not from the greyhound pressing her, nothing is to be allowed.

e. The merit of a Kill must be estimated according to whether a greyhound by his own superior dash and skill bears the hare; whether he picks her up through any little accidental circumstance favouring him; or whether she is turned into his mouth, as it were, by the other greyhound.

f. The Trip, or unsuccessful effort to kill, is where the hare is thrown off her legs, or where the greyhound flecks her, but cannot hold her.

20. The following allowances shall be made for accidents to a greyhound during a course; but in every case they shall only be deducted from the other dog's score :—

a. For losing ground at the start, either from being unsighted, or from a bad slip, in which case the judge is to decide what amount of allowance is to made, on the principle that the score of the foremost dog is not to begin until the second has had an opportunity of joining in the course.

b. Where a hare bears very decidedly in disfavour of one of the greyhounds, after the first or subsequent turns, in which case the next point shall not be scored by the dog who may be unduly favoured, or only half his point allowed, according to circumstances. No greyhound shall receive any allowance for a fall, or an accident of any description whatever, with the exception of being ridden over by the owner of the competing greyhound or his servant, provided for by Rule 23, or when pressing his hare, in which case his opponent shall not count the next point made.

21. PENALTIES are as follows :—

a. Where a greyhound, from his own defect, refuses to follow the hare at which he is slipped, when he shall lose the course.

b. Where a dog wilfully stands still in a course, or departs from directly pursuing the hare, no points subsequently made by him shall be scored; and if the points made by him up to that time be just equal to those made by his antagonist in the whole course, he shall thereby lose the course; but where one or both dogs stop with the hare in view, through inability to continue the course, it shall be decided according to the number of points gained by each dog during the whole course.

c. If a dog refuses to fence where the other fences, any points subsequently made by him are not to be scored; but if he does his best to fence, and is foiled by sticking in a meuse, the course shall end there. When the points are equal, the superior fencer shall win the course.

22. If a second hare be started during a course, and one of the dogs follow her, the course shall end there.

23. GREYHOUND GETTING LOOSE.—Any person allowing a greyhound to get loose and join in a course which is being run, shall be fined 1*l.* If the loose greyhound belong to either of the owners of dogs engaged in the particular course, such owner shall forfeit his chance of the stake with the dog then running, unless he can prove to the satisfaction of the stewards that he had not been able to get the loose greyhound taken up after running its own course. The course is not to be considered as necessarily ended when a third dog joins in.

24. RIDING OVER A GREYHOUND.—If any subscriber, or his servant, shall ride over his opponent's greyhound while running a course, the owner of the dog so ridden over shall (although the course be given against him) be deemed the winner of it, or shall have the option of allowing the other dog to remain and run out the stake, and in such case shall be entitled to half its winnings, if any.

25. A "no course" is when, by accident or by the shortness of the course, the dogs are not tried together, and if one be then drawn the other must run a bye, unless the judge on being appealed to shall decide that he has done work enough to be exempted from it. An "undecided course" is where the judge considers the merits of the dogs equal; and if either is then drawn the other cannot be required to run a bye; but the owners must at the time declare which dog remains in. (See Rule 27.) The judge shall signify the distinction between a "no course" and an "undecided" by taking off his hat in the latter case only. After an undecided or no course, if the dogs before being taken up get on another or the same hare, the judge must follow, and shall decide in favour of one, if he considers that there has been a sufficient trial to justify his doing so. A "no course" or "undecided" may be run again immediately, or, if claimed on behalf of both dogs, before the next brace are put into the slips, or in any case for "no course" if so ordered by the judge, otherwise it shall be run again after the two next courses, unless it stand over to the next morning, when it shall be the first course run. If it is the last course of the day, fifteen

minutes shall be allowed after both dogs are taken up.

26. The judge shall render an explanation of any decision only to the stewards of the meeting, if required through them before the third succeeding course, by the owner or nominator, or representative of the owner or nominator, of either of the greyhounds engaged in the course. The stewards shall, if requested to do so, express their opinion whether the explanation is satisfactory or not, and their opinion in writing may be asked for and published afterwards; but the decision of the judge, once given, shall not be reversed for any cause.

27. Withdrawal of a Dog.—If a dog be withdrawn from any stake on the field, its owner, or some one having his authority, must at once give notice to the secretary or flag-steward. If the dog belong to either of these officials, the notice must be given to the other.

28. Impugning Judge.—If any subscriber openly impugns the decision of the judge on the ground, except by a complaint to the stewards, according to Rule 26, he shall forfeit not more than 5*l.*, nor less than 2*l.*, at the discretion of the stewards.

29. Stakes not Run Out.—When two greyhounds remain in for the deciding course, the stakes shall be considered divided if they belong to the same owner or confederates, and also if the owner of one of the two dogs induces the owner of the other to draw him for any payment or consideration; but if one of the two be drawn without payment or consideration, from lameness, or from any cause clearly affecting his chance of winning, the other may be declared the winner, the facts of the case being clearly proved to the satisfaction of the stewards. The same rule shall apply when more than two dogs remain in at the end of a stake which is not run out, and in case of a division between three or more dogs, of which two or more belong to the some owner, these latter shall be held to take equal shares of the total amount received by their owner in the division. The terms of any arrangement to divide winnings, and the amount of money given to induce the owner of a dog to draw him, must be declared to the secretary.

30. Winners of Stakes Running Together.—If two greyhounds shall each win a stake, and have to run together for a final prize or challenge cup, should they not have run an equal number of ties in their respective stakes, the greyhound which has run the smaller number of courses must run a bye, or byes, to put itself upon an equality in this respect with its opponent.

31. Objections.—An objection to a greyhound may be made to any one of the stewards of a meeting at any time before the stakes are paid over, upon the objector lodging in the hands of such steward, or the secretary, the sum of 5*l.*, which shall be forfeited if the objection prove frivolous, or if he shall not bring the case before the next meeting of the National Club, or give notice to the stewards previous thereto of his intention to withdraw the objection. The owner of the greyhound objected to must deposit equally the sum of 5*l.*, and prove the correctness of his entry. All expenses in consequence of the objection shall be borne by the party against whom the decision may be given. Should an objection be made which cannot at the time be substantiated or disproved, the greyhound may be allowed to run under protest, the stewards retaining his winnings until the objection has been withdrawn, or heard and decided. If the greyhound objected to be disqualified, the amount to which he would otherwise have been entitled shall be divided equally among the dogs beaten by him; and if a piece of plate or prize has been added, and won by him, only the dogs which he beat in the several rounds shall have a right to contend for it.

32. Defaulters.—No person shall be allowed to enter or run a greyhound, in his own or any other person's name, who is a defaulter for either stakes, forfeits, or bets, or for money due under an arrangement for a division of winnings, or for penalties regularly imposed for the infraction of rules by the stewards of any meeting, or for any payment required by a decision of the National Club, or for subscriptions due to any club entitled to have representatives in the National Club. As regards bets, however, this rule shall only apply when a complaint is lodged with the secretary of the National Club within six months after the bet becomes due. On receipt of such complaint the

secretary shall give notice of the claim to the person against whom it is made, with a copy of this rule, and if he shall not pay the bet, or appear before the next meeting of the National Club, and resist the claim successfully, he shall be considered a defaulter.

33. Judge or Slipper Interested.—If a judge or slipper be in any way interested in the winnings of a greyhound or greyhounds, the nominator in each case, unless he can prove satisfactorily that such interest was without his cognizance, shall forfeit all claim to the winnings; and if any nominator or owner of greyhounds shall give, or offer, or lend money or anything of value to any judge or slipper, such owner or nominator shall not be allowed to run dogs in his own or any other person's name during any subsequent period that the club may decide upon.

34. Any person who is proved to the satisfaction of the National Club to have been guilty of any fraudulent or discreditable conduct in connexion with coursing, may, in addition to any pecuniary penalty to which he may be liable, be declared incapable to run or enter a greyhound in his own or any other person's name during any subsequent period that the club may decide upon.

35. Bets on an Undecided.—All bets upon an undecided course shall stand, unless one of the greyhounds be drawn. All bets upon a dog running further than another in the stake, or upon the event, shall be p.p., whatever accident may happen; but bets upon a deciding, as upon every other single course, are off if the course is not run.

36. Bets on Stakes Divided.—Where money has been laid against a dog winning a stake, and he divides it, the two sums must be put together, and divided in the same proportion as the value of the stake.

Sect. 3.—Pedigrees of Celebrated Dogs.

The following pedigrees of celebrated dogs are inserted, foremost amongst which I must place that of Master M'Grath, as having won the Waterloo Cup three times. Cerito is the only other greyhound which has achieved this feat: but it must be remembered that in her day the Cup consisted of only thirty-two entries, and was consequently far less difficult to win than at present.

If the number of dogs beaten by each is taken into the account in making the comparison between these two celebrated greyhounds, Master M'Grath is a long way above the Lancashire bitch, as the following summary will show:—

Cerito.

1849. Beaten (as "Lucy Long") in first course, Cockerham Cup.
1850 Beaten in fourth course for Broughton Cup (3); won Waterloo Cup (5); beaten in third course at Altcar (3); drawn after first course at Wiltshire Champion (1); won Ridgway Challenge Cup (4).
1851. Beaten in fourth course at Broughton (3); beaten in first course for Waterloo Cup; ran up for Altcar Stakes (3); beaten in third course at Londesborough (2).
1852. Won Crenoline Stakes, Southport (4); won Altcar Cup (3); won Waterloo Cup (5); beaten in first course for Scarisbrook Cup.
1853. Won Altcar Cup (4); won Waterloo Cup (5).

Total: won 45 courses, lost 8.

Master. M'Grath.

1867. Won Visitors' Cup, Lurgan (5); divided Moneyglass Purse, Creagh (4½).
1868. Won Waterloo Cup (6); divided Brownlow Cup, Lurgan (4½).
1869. Won Waterloo Cup (6).
1870. Beaten in first course for Waterloo Cup; won Brownlow Cup (5).
1871. Won Waterloo Cup (6).

Total: won 36, lost 1, divided 2.

At the end of the pedigree tables an Index will be found, giving the names of animals whose parentage is included in the following tables.

(1) MASTER M'GRATH, *black and white dog* (LORD LURGAN'S).

LORD LURGAN'S MASTER M'GRATH	Derrock (Gardiner)	St. Clair	Figaro (Fyson)	King Cob (Daintree)	Ion
					Kate
				Frederica (Fyson)	Damon
					Daffodil
			Black Fly (Pridmore)	Marquis (Webb)	Rocket
					Stella
				Kirtles (Kershaw)	Kouli Khan
					Knavery
		Erin (Douglas)	Lightfoot (Howie)	Sam (B. Robinson)	Hilcoolie
					Old Whisky
				Empress (B. Robinson)	Bennett's Rocket
					Easterby's Empress
			Jenny Lind (Jones)	Scythian (Edleston)	Fox
					Warwick
				Syren (Lord Sefton)	Sadek
					Sanctity
	Lady Sarah (Lord Lurgan)	David (Long)	Motley (Jardine)	Sam (Gibson)	Traveller
					Tippitywitchet
				Tollwife (Jardine)	King Cob
					Matilda Gillespie
			Wanton (Wadham)	Senate (Lord Sefton)	Sadek
					Sanctity
				Coquette (Webb)	Kouli Khan
					Knavery
		Lady Watford (Willis)	Larriston (Sharpe)	Liddesdale (Sharpe)	Bowhill
					Lady Seymour
				Hannah (Saunders	Buff
					Catlowdie
			Consideration (Willis)	Kentish Fire (Daintree)	King Cob
					Knab
				Linnet (Thomas)	Easterby's Emperor
					Old Linnet

(2) CAULD KAIL, *red ticked dog* (MR. W. FORSTER'S).

MR. FORSTER'S CAULD KAIL	Union Jack	Bridegroom	Judge	John Bull	Lodore
					Jane
				Fudge	Oliver Twist
					Fairy
			Bartolozzi	Dositheus	Fop
					Débutante
				The Cur	Crofton
		Attermire	British Grenadier	Smoker	
				Sawdust	
			Lady Neville	Neville	Scot
					Grace
				Scotia	Emperor
					Mavourneen
	Scotia's Thistle	Selby	Barrator	Barrister	Doron
					Hebe
				Alice	
			Ladylike	Baron	Kentish Fire
					Linnet
				Bella	Captain
					Queen
		Meg	Bonnie Prince Charlie	Cardinal Wiseman	
				The Widow	Winspiel
					Brenda
			Fanny	John o' Badenyon	Mercury
					Queen of the May
				Repentance	Crofton
					Phantom

(3) PATENT, *brindled and white dog* (Mr. T. Price's).

MR. PRICE'S PATENT

David
- Sam
  - Motley
    - Traveller
      - Charles XII.
      - Madame
    - Tippitywitchet
      - King Cob
      - Kathleen
  - Tollwife
    - King Cob
      - Jon
      - Kate
    - Matilda Gillespie
      - Ian Roy
      - Lady
- Wanton
  - Senute
    - Sadek
      - Kouli Khan
      - Harriet
    - Sanctity
      - Stradbroke
      - Leanthe
  - Coquett
    - Kouli Khan
      - Topper
      - Hannah
    - Knavery
      - Bachelor
      - Nimble

Lady Clara
- Mansoor
  - Egypt
    - Vraye Foy
      - Jason
      - Rosebud
    - Elf
      - Westwind
      - Snail
  - Mocking Bird
    - Figaro
      - King Cob
      - Frederica
    - Malvina
      - Meaman
      - Marsala
- Bess
  - Wrestler
    - Foremost
      - Fantail
      - Frederica
    - Flirt
      - Marquis (Webb)
      - Coquette
  - Ringlet
    - Rector (Russon's)
    - Venus (his)

(4) KING DEATH, *white and black dog* (Dr. Richardson's).

DR. RICHARDSON'S KING DEATH

Canradzo, w
- Beacon, be (Borron)
  - Blueligkt (Borron)
    - Monsoon
      - Colonel
      - Smart
    - Stave
      - Bugle
      - Strawberry
  - Frolic, w be (Ld. Eglinton)
    - Waterloo (his)
      - Dusty Miller
      - Exotic
    - Clarinda (his)
      - Cessnock
      - Young Hornet
- Scotland Yet, w (Campbell)
  - Wigan, bd (Pagan)
    - Drift (Lord Douglas)
      - Driver (his)
      - Coquette (his)
    - Cutty Sark (Hyslop)
      - Kirkland
      - Cutty Sark
  - Veto, w (Greenshield)
    - Dux (Lord Douglas)
      - Driver (his)
      - Duppy (his)
    - Tillside Lass, w (Lord Ossulston)
      - Draffin
      - Old Tillside Lass

Annoyance, w bk (Anderson)
- Heart of Oak, w bk (Anderson)
  - Game Chicken (Anderson)
    - Figaro
      - King Cob
      - Frederica
    - Fancy
      - Fairy (Fyson)
  - Seedling (Anderson)
    - Spring
      - Dan O'Connell
      - White Cockade
    - Marigold
      - Tout
      - Mawken
- Miss Johnson
  - Admiral (Brown)
    - Miner
      - Twister
    - Countess
  - Miss Quirk

(5) BEACON, *blue dog* (MR. BORRON'S).

MR. BORRON'S BEACON (brother to Black Cloud)	Bluelight	Monsoon	Colonel (bro. to Streamer)	Colwick
			Smart	Sis. to Herdsman
		Stave	Bugle	Streamer
			Strawberry	Bride
	Frolic	Waterloo	Dusty Miller	Bachelor
			Exotic	Nimble
		Clarinda	Cessnock	Tinto
			Young Hornet	Swan
				Nestor
				Chance
				Dr. of Monarch
				Sport
				Old Hornet

(6) DAVID, *red dog* (MR. LONG'S).

MR. LONG'S DAVID	Motley	Sam	Traveller	Charles XII.	Velox
				Venus	
			Tippitywitchet	Madame	Bouncer
				Magic	
		Tollwife	King Cob	King Cob	*see below*
				Kathleen	Norwood
					Snowball
			Matilda Gillespie	Ion	Stumps
				Ida	
				Kate	Deptford
					Sister to Fanny
				Ian Roy	Jehu (lie's)
					Swallow (Bail-
				Lady	Kent (son's)
					Swallow (Pater-
	Wanton	Senate	Sadek	Kouli Khan	*see below*
				Harriet	Spartacus
					Fly (Cotton's)
			Sanctity	Stradbroke	Mariner
					Fly
				Leanthe	Lifter
					Leah
		Coquet's	Kouli Khan	Topper	Hercules
					Laura
				Hannah	Harold
					Mayfly
			Knavery (sister to Ball's Bugle)	Bachelor	Merlin
					Spider
				Nimble	Lunardi
					Fairy

(7) LOPEZ, *black ticked dog* (MR. LAWRENCE'S).

MR. LAWRENCE'S LOPEZ (brother to Egypt)	Vraye Foy	Jason	Walter	Monarch
				Betsy Baker
			Risk	Deluge*
				Butterfly
		Rosebud	Majesty (brother to Mariner)	
			Butterfly	Galloway
				Snap
	Elf	Westwind	Bran	Eurus†
				Harebell
			Gaiety	England's Queen
		Snail	Hilaris	
			Snail	

* Eleventh cross from bulldog. † Sixth cross from bulldog.

(8) BRIGADIER, *black and white dog* (Mr. W. Foulkes's).

MR. FOULKES'S BRIGADIER	Boreas	Figaro	King Cob	Ion	Stumps
					Ida
				Kate	Deptford
					Sis. to Fanny
			Frederica	Damon	
				Daffodil	What Not
					Nonpareil
			King Cob (Hemsley)	Smoker	
				Lady	
		Bessy Bedlam			
				Brother to Brigand	Rubens
					Eve
			Lively	Lady	Tinker
					Fan
	Wee Nell	Seacombe	Hermit	Weapon	Figaro
					Ruby
				Sister to New World	Columbus
					Wilful
			Fly	Croton Oil	Case-is-altered
					Waterwitch
				Lady Maria	
			Larriston	Liddesdale	Bowhill
					Lady Seymour
				Hannah	Buff
					Catlowdie
		Lady Watford		Kentish Fire	King Cob
					Knab
			Consideration	Linnet	Emperor
					Old Linnet

(9) MARIONETTE, *fawn and white bitch* (Mr. W. H. Clark's).

MR. CLARK'S MARIONETTE	Patent	David	Motley	Sam	Traveller
					Tippitywitchet
				Tollwife	King Cob
					Matilda Gillespie
			Wanton	Senate	Sadek
					Sanctity
				Coquette	Kouli Khan
					Knavery
			Mansoor	Egypt	Vraye Foy
					Elf
		Lady Clara		Mocking Bird	Figaro
					Malvina
			Bess	Wrestler	Foremost
					Flirt
				Ringlet	Rector (Russon)
					Venus (his)
	Bonnie Lassie	Beacon	Bluclight	Monsoon	Colonel
					Smart
				Stave	Bugle
					Strawberry
			Frolic	Waterloo	Dusty Miller
					Exotic
				Clarinda	Cessnock
					Young Hornet
		Bonnie Lass	Mathematics	Juggler (Ramsay)	Worcester Marquis
					Empress (Etwall)
				Vote of Thanks	Rufus
					Mavoureen
			Beauty	Figaro	King Cob
					Frederica
				Countess	Grasper
					Ellen Tree

(10) HIGH IDEA, *blue ticked bitch* (MR. J. HYSLOP'S).

MR. HYSLOP'S HIGH IDEA	Black Cloud	Bluclight	Monsoon	Colonel	Topper
					Pearl
				Smart	Streamer
					Bride
			Stave	Bugle	Bachelor
					Nimble
				Strawberry	
		Frolic	Waterloo	Dusty Miller	Tinto
					Swan
				Exotic	Nestor
			Clarinda	Cessnock	Chance
					dam by Monarch
				Young Hornet	Sport
					Old Hornet
	Young Eve	Eden	Winspiel	Waterloo	Dusty Miller
					Exotic
				Midsummer	Mermaid
			Brenda	Oiseau	
				Vesta	
		Old Eve	Tyrant	Corby	Sacerdos
				Bluefly	
			Hannah	Buff	Sacerdos
				Catlowdie	Swing
					Countess

(11) LADY STORMONT, *black and white bitch* (MR. R. B. CARRUTHERS'S).

MR. CARRUTHERS'S LADY STORMONT	Blue Ruin	Antipas	Viceroy	Wigan	Drift
					Cutty Sark
				Veto	Dux
					Tillside Lass
			Queen of the Forest	Haphazard	Heather Jock
					Queen Bee
				Fancy's All	Annandale
					Blinkin Bess
		Carolina	Japhet	Rufus	Heather Jock
					Blackbird
				Reform	Young Carron
					Nettle
			Sis. to Japhet	Rufus	Heather Jock
					Blackbird
				Reform	Young Carron
					Nettle
	Holiday	Skyrocket	Bluclight	Monsoon	Colonel
					Smart
				Stave	Bugle (Ball)
					Strawberry
			Syncopé	Worcester Marquis	Rocket
					Stella
				Syncopéché	Kouli Khan
					Harriet
		Jailbird	Junta	Senate	Sadek
					Sanctity
				Tiny Trip	Scythian
					Elvira
			Humming Bird	Figaro	King Coo
					Frederica
				Malvina	Mealman
					Marsala

(12) CHLOE, *white and black bitch* (Mr. T. T. C. Lister's).

MR. LISTER'S CHLOE

Judge	John Bull	Lodore	Briton	Emperor
				Knavery
			Lady	Nathan
				Risk
		Jane	Sandy	Bachelor
				Venus
			Smart	Streamer
				Bride
	Fudge	Oliver Twist	Sancy	Kouli Khan
				Harriet
			Sanctity	Stradbroke
				Leanthe
		Fairy	Carronade	Old Carron
				Sis. to Fairy
			Gamut	Vagrant
				Garland
Clara	Lopez	Vraye Foy	Jason	Walter
				Risk
			Rosebud	Majesty
				Butterfly
		Elf	Westwind	Bran
				Gaiety
			Snail	Hilaris
				Snail
	Mrs. Kitty Brown	Sam	Traveller	Charles XII.
				Madame
			Tippitywitchet	King Cob
				Kathleen
		Tollwife	King Cob	Ion
				Kate
			Matilda Gillespie	Ian Roy
				Lady

(13) BAB AT THE BOWSTER, *red bitch* (Mr. C. Blanshard's).

MR. BLANSHARD'S BAB AT THE BOWSTER

Lonnerges	Canaradzo	Beacon	Bluelight	Monsoon
				Stave
			Frolic	Waterloo
				Clarinda
		Scotland Yet	Wigan	Drift
				Cutty Sark
			Veto	Dux
				Tillside Lass
	Baffle	Hughie Graham	Liddesdale	Bowhill
				Lady Seymour
			Queen of the May	King Cob
				Minerva
		Wild Duck	Sam (Gibson)	Traveller
				Tippitywitchet
			Nimble	Douglas (Raimes)
				Unit (Raimes)
Mischief (Eland)	Priam (Ireland's)	Priam		
		Virago	Cambridge	Figaro
				Bashful Fanny
	Mischief	Mynheer	Muley (Forster)	Sportsman (Jolly)
				Lucy
			Alice Hawthorne (Hutchinson)	
		Sis. to Lass o' Gowrie	Mangonel	Figaro
				Countess (Bart'mew)
			Marionette (Sis. to Mocking-Bird)	Figaro
				Malvina

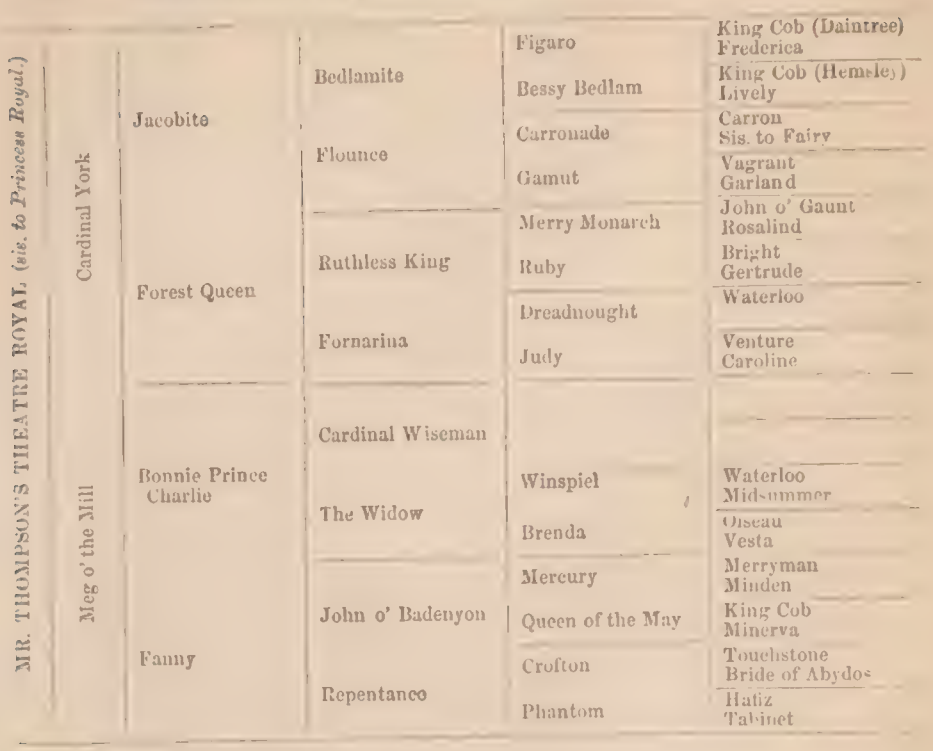
(14) LOBELIA, *white and brindled bitch* (Mr. W. J. Legh's).

Mr. Legh's Lobelia	Sea Foam	Beacon	Bluelight	Monsoon	Colonel
					Smart
				Stave	Bugle
					Strawberry
			Frolic	Waterloo	Dusty Miller
					Exotic
				Clarinda	Cessnock
					Young Hornet
		Scotland Yet	Wigan	Drift	Driver
					Coquette
				Cutty Sark	Kirkland
					Cutty Sark
			Veto	Dux	Driver
					Duppy
				Tillside Lass	Draffin
					Old Tillside Lass
	Lilac	Liston	Skyrocket	Bluelight	Monsoon
					Stave
				Syncope	Worcester Marquis
					Syneedoché
			Silkworm (Stone)		
		Snowdrop	Barabbas (Besant)	Egypt	Vraye Foy
					Elf
				Cobæa Scandens	Foremost
					Cygnet
			Medora	Czar	Foremost
					Catch'em
				Wideawake	Grasshopper
					Nell

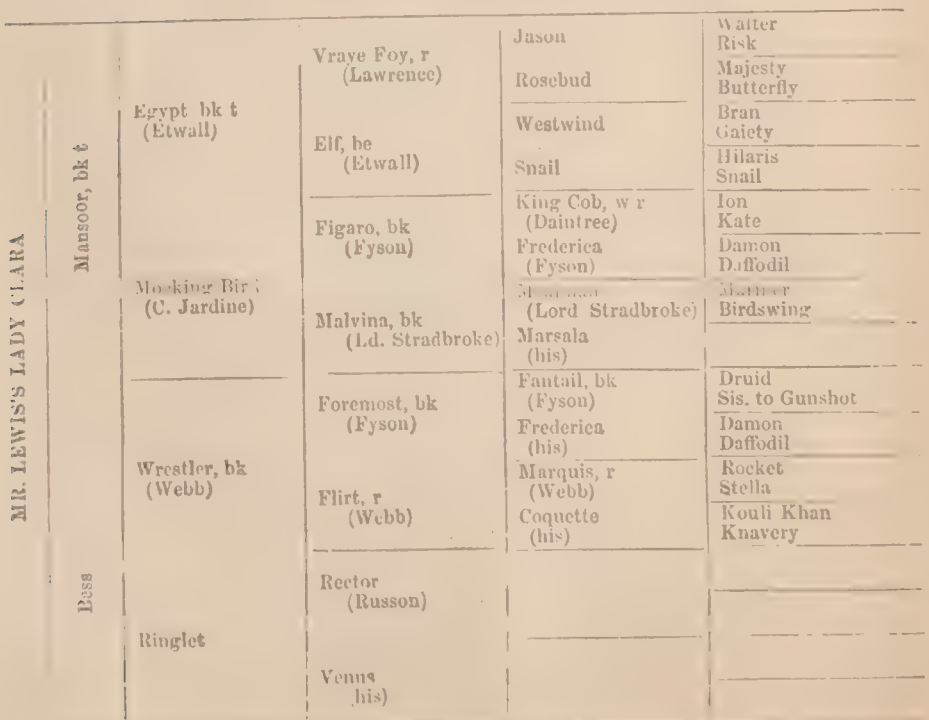
(15) SEA COVE, *red bitch* (Mr. J. Spinks's).

Mr. Spinks's Sea Cove (late Covet)	Curiosity, bk (Clark)	Strange Idea, bk w (Hyslop)	Cardinal York, r w (Dunlop)	Jacobite, bk (Gibson)	Bedlamite, bk (Brown)	Figaro
						Bessy Bedlam (Brown)
					Flounce, f (Fox)	Carronade (Bragg)
						Gamut (Fox)
				Forest Queen, w bk (Dunlop)	Ruthless King (Dunlop)	Merry Monarch (Dunlop)
						Ruby (Dunlop)
					Fornarina (Dunlop)	Dreadnought (Dunlop)
						Judy (Dunlop)
			High Idea, be t (Hyslop)	Black Cloud, bk (Borron)	Bluelight, be (Borron)	Monsoon
						Stave
					Frolic (Lord Eglinton)	Waterloo (Lord Eglinton)
						Clarinda
				Young Eve, be (Hyslop)	Eden, r (Clemitson)	Winspiel (Lord Eglinton)
						Brenda (Clemitson)
					Old Eve, be (Atkinson)	Tyrant (Taylor)
						Hannah (Mounsey)
		Bugle	Beacon, be (Borron)		Bluelight, be (Borron)	Monsoon
						Stave
					Frolic (Lord Eglinton)	Waterloo (Lord Eglinton)
						Clarinda
				Scotland Yet, w bd (Campbell)	Wigan, bd (Hyslop)	Drift (Lord Douglas)
						Cutty Sark
					Veto, w (Greenshield)	Dux (Lord Douglas)
						Tillside Lass (Lord Ossulston)
	Bunter, bk (Black)			A, bk (Lambert)	Bedlamite, bk (Brown)	Figaro
						Bessy Bedlam
					Calypso, bk (Lambert)	Field Marshal (Fyson)
						Effie Deans (Dixon)
				The Pullet, f w (Black)	Game Chicken, bk (Anderson)	Figaro (Fyson)
						Fancy
					Sultana (Surtees)	Sultan
						Alice Grey

(16) THEATRE ROYAL, *fawn and white bitch* (Mr. Thompson's).



(17) LADY CLARA, *black bitch* (Mr. Lewis's).



(18) SMUGGLER, *black dog* (Mr. W. Smith's).

MR. SMITH'S SMUGGLER.

Liddington (Ewing)	Look Out (Ewing)	Entry-Money (Ewing)	Bannockburn (Ewing)	Kent
				Cora
			Daughter of	Eager
				Eastward
		Jessamine (Ewing)	Emulation (Ewing)	Bouncer
				Bella
			Queen	Lofty
	Effie Sunshine (Ewing)	Leonard Lindsey (Ewing)	Juryman (Ewing)	Leven Water
				Wicked Eye
			Sis. to Entry-Money	Bannockburn
				Eager bitch
		Leoline (Lawrence)	Lopez (Lawrence)	Vraye Foy
				Elf
			Landgravine (Lawrence)	Chieftain
				Ruby
Sixty-three (Smith)	Seagull (Spencer)	Bedlamite (Brown)	Figaro (Fyson)	King Cob (Daintree)
				Frederica
			Bessy Bedlam (Brown)	King Cob (Hemsley)
				Lively
		Raven (Randell)	Foremost (Fyson)	Fantail
				Frederica
			Blackfly (Pridmore)	Marquis
				Kirtles
	Sourocks (Steel)	Guy Mannering (Gordon)	John o' Badenyon (Sharpe)	Mercury
				Queen of the May
			Gaylass	Rufus
				Mavourneen
		Jenny (Gordon)	The Squire (Dr. Brown)	Cessnock
				Old Hornet
			Reform (Raper)	Young Carron
				Nettle

(19) BED OF STONE, *fawn bitch* (Mr. Briggs's).

MR. BRIGGS'S BED OF STONE.

Portland (Purser)	Effort (brother to the Brewer) (East)	Larriston (Sharpe)	Liddesdale (Sharpe)	Rowhill
				Lady Seymour
			Hannah (Saunders)	Buff
				Catlowdie
		Hopmarket (Blick)	Bedlamite (Brown)	Figaro
				Bessy Bedlam
			Cerito (Cooke)	Lingo
				Wanton (Walmsley)
	Prizeflower (Purser)	Paramount (Purser)	Idas (Inskip)	King Cob
				Kathleen
			Pamela (Purser)	Son of Stumps
				Dam of Baron
		Isis (Inskip)	Probity (Inskip)	King Cob
				Kate
			Daughter of	Fantail
Imperatrice (Jefferson)	David (Long)	Motley (C. Jardine)	Sam (Gibson)	Traveller
				Tippitywitchet
			Tollwife (J. Jardine)	King Cob
				Matilda Gillespie
		Wanton (Wadham)	Senate (Lord Sefton)	Sadek
				Sanctity
			Coquette (Webb)	Kouli Khan
				Knavery
	Java (Jefferson)	Judge (Jefferson)	John Bull (Jefferson)	Lodore
				Jane
			Fudge (Fox)	Oliver Twist
				Fairy
		Moll Troll (Slater)	Young Champion (Heron)	Champion
				Fly (Cuthbert)
			Maid of the Mill (Dickson)	Tomboy
				Fly (Dickson)

(20) RIOT, *black bitch* (Mr. Randell's).

MR. RANDELL'S RIOT (*sister to Ranter*).	Black Fly (Pridmore)	Bedlamite (Brown)	Lizzie (Fyson)	King Cob (Daintree)	Ion (Inskip)	Stumps
					Kate (Daintree)	Ida
				Frederica (Fyson)	Damon (Dobede)	Deptford
					Daffodil (Dobede)	Sister to Fanny
			Bessy Bedlam (Brown)	King Cob (Hemsley)	Smoker (Hemsley)	Doron
					Lady (Hemsley)	Ma'mselle
				Lively (Woodroffe)	Brother to Brigand	What Not
					Lady	Nonpareil
			Marquis (Webb)	Rocket (Bennett)	Streamer (Robinson)	Rubens
					Mars (Bancroft)	Eve
				Stella (Bennett)	Beverley	Tinker
					Wishful	Fan
			Kirtles (sis. to Coquette)	Kouli Khan (Kershaw)	Topper (Calvert)	Colwick
					Hannah (Hassall)	Sister to Herdsman
				Knavery (sister to Bugle)	Bachelor (Hill)	Old Topper
					Nimble (Jackson)	Hercules
						Laura
						Harold
						Mayfly
						Merlin
						Spider
						Lunardi
						Fairy

(21) EFFORT, *fawn dog* (Mr. East's).

MR. EAST'S EFFORT (*brother to the Brewer*).	Hopmarket (Black)	Larriston (Sharpe)	Liddesdale (Sharpe)	Bowhill (Lord J. Scott)	Benbron (Sir H. Campbell)	Rollo
					Bessy Bell (Lord Eglinton)	Lightning
				Lady Seymour (Mounsey)	Swing (Saunders)	Dusty Miller
					Daughter of (Graham)	Lass o' Patie's Mill
			Hannah (Saunders)	Buff (Mounsey)	Sacerdos (Humble)	Merryman
					Bewcastle Bet (Mounsey)	
				Catlowdie	Swing (Saunders)	
					Countess	
			Bedlamite (Brown)	Figaro (Fyson)	King Cob (Daintree)	Ion
					Frederica (Fyson)	Kate
				Bessy Bedlam (Brown)	King Cob (Hemsley)	Damon
					Lively (Woodroffe)	Daffodil
			Cerito (Cooke)	Lingo (Lamb)	Lark (Lamb)	Smoker
					Lady (Lamb)	Lady
				Wanton (Walmsley)	Emperor (Easterby)	Brother to Brigand
					Blossom (Walmsley)	Lady
						Leader
						Tongue
						Gunshot
						Venus
						Helenus
						Fly
						Hæmus
						Hadiz a Higa

(22) MAGNANO, *red dog* (Mr. C. Morgan's).

Mr. C. Morgan's Magnano.	Isoline (Inskip)	Cauld Kail (Forster)	Union Jack (Ingleby)	Bridegroom (Blackstock)	Judge (Jefferson)	John Bull
						Fudge
					Bartolozzi (Blackstock)	Dositheus
						The Cur
				Attermire (Armistead)	British Grenadier (Holmes)	Smoker
						Sawdust
					Lady Neville (Gardner)	Neville
						Scotia
			Scotia's Thistle (Brackenridge)	Selby (J. Jardine)	Barrator (Hole)	Barrister
						Alice
					Ladylike (J. Jardine)	Baron
						Bella
				Meg (Forster)	Bonnie Prince Charlie (Birnie)	Cardinal Wiseman
						Widow
					Fanny	John o' Badenyon
						Repentance
			Great Newbury Button (Colonel Goodlake)	David (Long)	Motley (C. Jardine)	Sam
						Tollwife
					Wanton (Wadham)	Senate
						Coquette
				Magic (Col. Goodlake)	Le Juif (Smith)	Lopez
						Lynx
					Magic (Miller)	Czar
						Mischief
		Beeswing (Begbie)		The Brewer (Bathurst)	Larriston (Sharpe)	Liddesdale
						Hannah
					Hopmarket (Blick)	Bedlamite
						Cerito
				Baroness (Begbie)	King Lear (Wilson)	Wigan
						Repentance
					Moneytaker (J. Jardine)	Sam
						Tollwife

(23) HONEYMOON, *black and white bitch* (Mr. W. Ford-Hutchinson's).

Mr. W. Ford Hutchinson's Honeymoon.	Hebe (Ford-Hutchinson)	Brigadier (Foulkes)	Boreas (Brown)	Figaro (Fyson)	King Cob (Daintree)	Ion
						Kate
					Frederica (Fyson)	Damon
						Daffodil
				Bessy Bedlam (Brown)	King Cob (Hemsley)	Smoker
						Lady (Hemsley)
					Lively (Woodroffe)	Brother to Brigand
						Lady
			Wee Nell (Smith)	Seacombe (Spinks)	Hermit (Kaye)	Weapon
						Sister to New World
					Fly (Tyrer)	Croton Oil
						Lady Maria
				Lady Watford (Willis)	Larriston (Sharpe)	Liddesdale
						Hannah
					Consideration (Willis)	Kentish Fire
						Linnet
		Canaradzo (Campbell)		Beacon (Borron)	Blue Light (Borron)	Monsoon
						Stave
					Frolic (Lord Eglinton)	Waterloo
						Clarinda
				Scotland Yet (Campbell)	Wigan (Pagan)	Drift
						Cutty Sark
					Veto (Greenshield)	Dux
						Tillside Lass
	Hawthorn (Ford-Hutchinson)			Dandy (Douglas)	Regulator (Winder)	Lysander
						Leda
					Erin (Douglas)	Lightfoot
						Jenny Lind
				Despised (Douglas)	Jalap (Anderson)	Croton Oil
						Jet d'Eau
					Edith (Douglas)	Lobster
						Lufra

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CHAPTER IX.

DEER AND RABBIT COURSING.

SECT. 1.—DEER COURSING.

As far as I know, deer coursing, which in the days of Mr. Scrope was still carried on in the Island of Jura, is now extinct, and therefore needs no remark.

SECT. 2.—RABBIT COURSING.

THE MODE OF CONDUCTING THE SPORT in rabbit-coursing is much the same as in coursing the hare, except that the rabbit is dropped before the dogs instead of being found in the natural way. Slips are used, and a brace of dogs only are let loose. The referee takes the rabbit from a basket, shows it to the dogs, held by the slipper, and then, carrying it forward in their sight, drops it at a mark some 20 yards in advance. The dogs, being let go, race together for the lead, and the one that "catches and holds" the rabbit wins the course. If both dogs get hold of the rabbit together, or if it escapes, the course is undecided.

THE DOGS are a cross of the terrier and greyhound, and are usually limited in weight, 25 lb. being that which is generally adopted. They are very fast for their size, but would of course be beaten by an inferior thorough-bred greyhound; hence, the stipulation is generally made as to breed and weight. They have great power of turning and stopping themselves, which is required by the short running and quick turning of the rabbits, which spirt about even more sharply than hares.

THE CHIEF LOCALITIES where this sport is carried on are the suburban gardens of our large manufacturing towns; as, for instance, the Royal Oak Gardens, Manchester, the Victoria at Leeds, Queen's at Sheffield, and many similar places in these and other towns in Lancashire and adjacent counties. Here the mechanic is enabled to amuse himself by trying his dog's powers in competition with others belonging to his companions. It may not be very interesting to those who can obtain more expensive and more exciting amusement, but to those who are confined in the murky air of our manufacturing towns, it affords an incitement to comparatively fresh air and out-door recreation of the body.

PART I.

THE PURSUIT OF WILD ANIMALS FOR SPORT.

BOOK IV.—FALCONRY.

CHAPTER I.

Sect. 1.—The Game Flown-at.

The Heron (*Ardea cinerea*), though already alluded to as being met with occasionally in the fens, must now be more fully described, since it is the chief of the birds at which the hawk is, or rather was, flown, in the sport called Falconry, or Hawking. In the winter herons are shy and solitary, and are then more frequently seen in the fens by themselves; but in the spring they congregate and resort to the place of breeding called "a heronry," which is usually in a high wood. The nests are built like those of the rook, which bird they resemble in their habits, at this time of the year, in many respects. Sometimes, however, they build upon rocks on the coast, and at others in reeds or rushes; but these are rare exceptions, and the ordinary situation is the top of a lofty oak, fir, or elm tree. The nest is very large and broad, made of sticks, and lined with wool. The eggs are four or five, of a sea-green colour. The heron feeds on fish, reptiles, mice, &c. When fishing, which is usually early in the morning and late at night, he stands motionless in shallow water, with the head between the shoulders, and, on seeing his prey, he darts his bill as quick as lightning into the water with a sure stroke. It is remarked that the heron always seeks the protection of a rock, or other impenetrable body, when a wind is blowing.

Kites, Partridges, Pheasants, Larks, Rooks, Magpies, Pigeons, Sparrows, and Wildfowl, Leverets, and Rabbits, have each in their turn been flown-at in modern times, within the limits of Great Britain. A great effort was made a few years ago to restore this almost forgotten sport to something like its pristine state by "Peregrine" in theory as well as practice, and by the Maharajah Dhuleep Singh by means of his private falconer. But the attempt failed to attract attention generally, and it is scarcely likely to become popular in such days as these, when the patience and perseverance of the old-fashioned sportsman are no longer practised. A few casts of falcons are still maintained where heronries are kept up, as one of the proofs of antiquity of places or race, to which most people cling who have any title to them; but they are so scarce as to be out of the reach of nine hundred and ninety-nine out of every thousand of her Majesty's sporting subjects.

Sect. 2.—Varieties of Hawks used in Falconry.

The Length of Wing and the notch in the bill form the basis of the two classes into which the hawks are divided; those whose wing-feathers project as far as the ends of their tails being called long-winged hawks, whilst the epithet short-winged is given to those whose tails are much longer than their wings. But the utility for hawking purposes does not always exactly depend upon this formation, since the short-winged goshawk and sparrow-hawk are far superior to the long-winged kestrel. All the falcons relieve their stomachs of the undigested feathers, bones, &c., of their prey, by vomiting up what is called "castings," some time after they have devoured their food. None of the falconidæ change their wing and tail-feathers in their first autumnal moult.

The Gyr-Falcon (*Falco gyrfalco*).—This splendid bird is long-winged, and is the largest species used in hawking; it is very rare in Great Britain, and can seldom be obtained even in Norway or Iceland, where it is comparatively common. In the olden days of falconry, the Iceland gyr-falcon was very highly esteemed, it being supposed to

be more courageous and of more rapid flight than the British variety, or even that obtained from Norway. Indeed, it was very commonly supposed to be a distinct species, but it is now generally considered as identical with the gyr-falcon of Great Britain. It was used for flying at herons and the larger kinds of wildfowl, for which its great size and strength made it peculiarly fitted. In length the gyr-falcon is about 23 inches. The beak is of a horn colour, with yellow cere, iris dark; the back and all the upper parts of the body vary according to age, from a plumage of dark brown shaded with light brown, to feathers each edged with white and having a light brown centre. The lower parts also vary from a pale brown to a pure white. The tarsi and toes are yellow; claws, black and much curved. The nest is built high among the rocks of the coast, and the eggs are of a dull white ground, mottled with pale reddish-brown; they are nearly two inches and a half long, and about two inches in diameter.

THE PEREGRINE FALCON (*Falco peregrinus*) being more common than any of the large long-winged falcons suitable for hawking purposes, has always been the chief subject of the falconer's art. She is nearly as large and powerful as the gyr-falcon. The female is larger than the male, and is consequently used in falconry in preference —being reserved for the heron and wildfowl, while the male is flown at partridges and quails. The yearling male is called a red tiercel, and the female a red falcon; the further names of eyess, gentil, passage, and haggard, are also applied to them according to the age at which they are taken, the first name being given to the nestling birds. The peregrine is found almost in all countries, hence its name. It builds on the high rocks all round the coast of England, Wales, and Scotland, and in the interior of Ireland, as well as on its sea coast; and lays from two to four eggs, about two inches long, by one and two-thirds in breadth, mottled all over with pale reddish-brown. In length it is about 18 inches, if a female; or 15 inches, if a male. The beak is blue; cere and eyelids, yellow; iris, dark brown; top of the head and neck, and also a spot under the eye, brown-black. The whole upper surface of the body is of a bluish-slate, or ash colour, hence its common name of "blue falcon;" these feathers are barred with a darker shade of the same colour, and both shades become lighter in old birds. The primaries, dark brown, barred and spotted with rusty white. Front of neck of a white ground, with longitudinal streaks of brown; breast, pale rusty-white with transverse bars of brown. Flanks and under surface of the tail-feathers barred with white. Legs and toes, yellow; claws, black. The young peregrines have all the upper parts of a brownish-ash colour, each feather having a rusty edge. The longitudinal streaks on the breast are also more marked.

THE HOBBY (*Hypotriorchis subbuteo*) is a peregrine in miniature, but of a more delicate, airy, and elegant shape. It is also more bold in proportion to its size, having sometimes been known to fly at birds larger than itself. It is a bird of passage in this country, appearing in the spring, and leaving us again for warmer regions in October or November. Its chief haunts are the woodlands of the more cultivated districts, where it probably succeeds in obtaining half-crippled thrushes, sparrows, or other birds, more easily than would be the case if they were whole and sound. It makes its nest in some high tree, usually selecting the deserted one of some other bird. The female lays three or four eggs, in length one inch and two-thirds, breadth one inch and one-third, speckled all over with reddish-brown on a ground of dirty white. The hobby is obliged to have recourse to large insects for food in default of birds, which it cannot always procure. The female measures 14 and the male 12 inches in length. The colours of the male are as follows: beak, horn-colour; cere, greenish-yellow; iris, brown; all the upper parts greyish-black, the feathers having each a whitish fringe; primaries and secondaries, black, edged with white; the two middle tail-feathers plain black, the others barred with a lighter shade; chin, white; cheek, black; breast, belly, and thighs of a yellowish-white ground, with streaks of brown; legs and toes, yellow; claws, black. It is too small for hawking purposes, but may be used to fly at larks or sparrows let loose from the hand.

The Merlin (*Hypotriorchis æsalon*) is, like the hobby, too small for the purpose of flying at any of the larger varieties of game; but, as he is a very bold bird, he is capable of being used with great efficiency in taking larks, &c., on the open downs, or small birds let loose from the hand. So bold and powerful is this little falcon, that he has been seen to strike and kill a partridge of more than double his weight. He is very tenacious of his prey, and it is very difficult to make him leave it when he has full possession. He does not often, like the hobby, feed on insects, but pursues small birds with unrelenting fury and courage. The greater number of the merlins found in this country are bred elsewhere, but many nests are found in the northern moors and in North Wales. The nest is made on the ground, with very scanty materials. The eggs are four or five in number, mottled with two shades of reddish-brown, and they measure one inch and seven lines by one inch and three lines. The merlin is from 10 to 12 inches in length. Its description is as follows: In the male—beak, horn-colour; cere, yellow; iris, brown; upper parts, blue-grey, with a dark line along the shaft on each feather; primaries, black; tail feathers, bluish-grey, verging to black towards the exterior third, and each feather having a white tip; chin and throat, white; breast and under parts, rufous, with patches or streaks of brown on each feather; legs and toes, yellow; claws, black. The females differ in having all the upper parts of a dark liver-brown, each feather having a rusty tip; tail, brown, with five narrow transverse bars of a deeper shade; under parts, pale whitey-brown, with darker streaks. The young males resemble the females.

The Kestrel, though a long-winged hawk and of very great powers of flight, can never be trained even to fly at small birds. Its timidity is so great that it will not return to the wrist of the falconer unless very strongly pressed by hunger. At one time I doubted this fact, but having persevered for many months in endeavouring to reclaim a pair of these birds, I can speak from experience as to its utter impracticability. It may, therefore, at once be dismissed from the list of hawks suitable to the falconer's purpose.

The remaining hawks are of the short-winged subdivision.

The Goshawk (*Astur palumbarius*) not only has the shorter wing to distinguish it from the true falcons, but it has also a lobe instead of a tooth on the cutting edge of the upper mandible. In flying at its game, the goshawk does not soar above it and then stoop, but follows in the same line, in a style which is called "raking" in falconry. This is occasioned by its comparative want of speed, which forbids its soaring, and it is consequently compelled to adopt the only plan left to it. Nevertheless, it is a very bold bird, and was formerly highly esteemed for flying at ground-game. Its flight is very fast for a short time, but it cannot long maintain its speed; and if it does not succeed at once, it gives up the pursuit and retires to the nearest tree, from which it may be easily "lured." Colonel Thornton was very partial to this species of hawk, and used it in the pursuit of pheasants to a great extent. Those which he trained were obtained partly from Scotland, but chiefly from the Continent. It is very rarely met with in the south of England, though a few specimens have been taken on Dartmoor; there is no record of its appearance in Ireland. It builds in some high tree on the outskirts of an extensive forest, and lays three or four eggs of a pale bluish-white. The female is from twenty-three to twenty-four inches long; male about seventeen or eighteen. Plumage alike in both, when full-grown; beak, horn-colour; cere and iris, yellow. All the upper parts dark-greyish brown, inclining to clove-brown in the females; tail-feathers, barred with a much lighter shade of brown. All the under parts white, with spots and undulating transverse bars of brownish-black on the breast, belly, and thighs. Cheeks and ear-crests, greyish; eyes and toes, yellow; claws, bluish. The young birds differ in having the top of the head and ear-coverts of a rusty white, with a dark band down the middle of each feather; back, wings, and upper tail-coverts, brown, with an edge of buff; primaries, dark-brown, with two shades of brown barred on the inner webs; under parts, greyish-white, each feather having a central patch of dark-brown; legs and toes, brownish-yellow.

THE SPARROW-HAWK (*Accipiter nisus*) is another short-winged hawk. It is much smaller, and bears in some measure the same relation to the goshawk which the merlin and hobby do to the gyr-falcon and peregrine. Thus, the young aspirant for honours in falconry may choose in every case any one of the three sets, and then confine himself to the under-sized bird, which must be flown at small game; or extend his operations to the more bold and expensive amusements for which the three larger varieties only are suited. In all the wooded districts of Great Britain this hawk is very common, and may be readily obtained when in the nest; but for the purpose of falconry it must either be allowed to reach its full powers in a wild state, and can then only be procured by trapping, or it must be reared in a half-wild state, called "rearing at hack." It is an extremely dangerous enemy to the poultry-yard, and the young broods of game; and, as I have already directed in the chapter on game-preserving, should be diligently rooted out in every preserve. It builds in some tree, generally in the deserted nest of a crow or magpie, and lays four or five eggs of a pale bluish-white blotched with dark reddish-brown. The male measures twelve inches in length; beak, blue; cere and iris, yellow; all the upper parts, rich dark-brown; tail, greyish-brown, transversely barred with darkish brown; under parts, rufous, with numerous transverse bars of a much darker shade; legs and toes, yellow: claws, black. The female is fifteen inches long, and differs as follows:—The upper parts are marked with delicate white spots, which are partially concealed by each successive feather; primaries and tail-feathers, of a lighter brown; under parts, greyish-white instead of rufous. The young male resembles the female, but the feathers of the back are not spotted with white, but are edged with reddish-brown.

THE KITE, BUZZARD, AND HARRIER may be reclaimed, but are not bold enough for the purpose of hawking; and so long as the peregrine falcon or goshawk may be obtained, no one would dream of their use. They have none of the daring of those birds in the presence of man, though, in a wild state, they sometimes exhibit great boldness and courage.

SECT. 3.—HAWKING APPARATUS, AND TECHNICAL TERMS.

THE HOOD PROPER is of the greatest importance in breaking the hawk to the hand, and its manufacture requires some little nicety of workmanship. Its great use is to tame the hawk by producing temporary blindness; and as we know the effect of solitary confinement in the dark, we can easily understand the consequence of this mode of treatment. This hood is made of stiff leather, and must be blocked upon a wooden model of the intended shape, so as to sit stiffly and firmly on the hawk's head. In order to obtain the necessary shape, a central portion of leather (*fig.* 1, *a*) is let in, and neatly stitched to the cheeks, which are seen

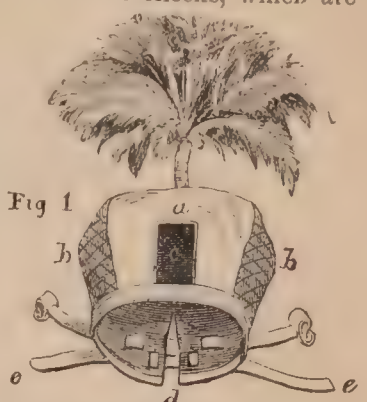

Fig 1

at *b b*; *c* is an aperture for the beak to come through, and should be large enough to allow of the bird ejecting his castings without difficulty, but not wide enough to allow him to see; *d* is a slit at the back, to allow of its being put over the head, and afterwards confined by means of the leathern braces *e e*, which draw together, and fix it easily, yet securely. In blocking the leather, a convex piece of leather or other material should be fixed upon the ground-block to represent the eye, by which precaution the hood is rendered more concave at that part, and is prevented from pressing upon that delicate organ. If this is properly attended to, the hood sits quite easily, even on the prominent eyes of the kestrel, which is the most difficult of all to fit without injury. The hood proper is usually ornamented with a tuft of feathers, as shown above.

THE RUFTER-HOOD is intended to remedy the defects of the hood-proper, when badly made, but instead of th s

it only aggravates the evil. Every one knows that a smooth and polished piece of leather would be less painful to the eye than a rough surface, even though soft and pliant: besides, the

Fig 2

rufter-hood being of cloth or pliable leather, is more liable to be rubbed into the eye in the efforts of the hawk to get rid of it; I have found by experience that it is a very bad substitute, even for a badly-made hood proper. It is made in two pieces, having a neat seam down the centre, and, like the hood-proper, has a hole for the beak and also a slit at the back with a brace (see *fig.* 2, *a* and *b*).

The Brail (*fig.* 3) is merely a slip of soft leather slit down by the knife, so as to include the wings (as shown at *fig.* 3, *a b*), while the end is continued backwards, and being carried along the side, is tied to the other end above the back. Its object is to prevent the newly-caught hawk from fluttering, or "baiting," as it is called, which would permanently injure her feathers, so as to interfere with her appearance and powers.

Jesses and Bells are fixtures to the legs of the falcon, being constantly

Fig 3

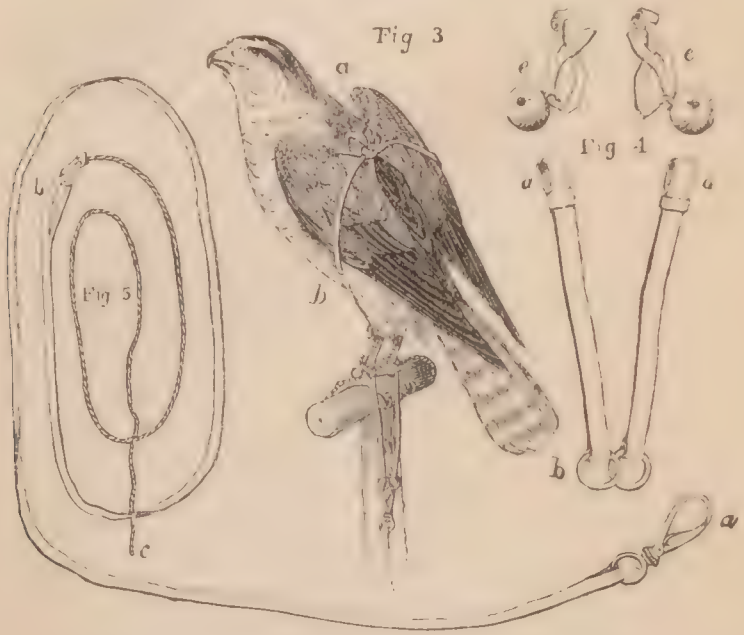

Fig 4

suffered to remain on, even when flying at her quarry. The jesses are two slips of leather or knitted silk, one for each leg, a few inches long, varying with the size of the hawk. One end of each (*fig.* 4, *b*) has a ring to which the swivel of the leash is attached; the other has a running noose (*a a*), in which the leg of the hawk, together with the "bewit" of the bell, is inserted. The jesses are held by the fingers of the falconer when the bird is on his wrist, or they serve to attach her to him by the leash when in training. The bells are for the purpose of finding the hawk when she is at large, and they are attached by a double slip of leather called the *bewit* (*fig.* 4, *e*), through which the leg is passed, and then the button is still further confined by the running noose of the jess.

The Leash (*fig.* 5, *a b*) and Creance (*fig.* 5, *b c*) are for the purpose of confining the hawk. The former is of leather, with a swivel, by which it can immediately be unhooked from the jesses when the game is on the wing. At the other end it has a simple loop (*b*), by which it may be lengthened with a light cord called the "creance." This

last is only used for training purposes.

THE LURE, in some form or other, is used to entice the hawk back to the wrist of the falconer, either after an unsuccessful flight, or when the game is struck and is to be saved from the talons of its devourer. The ORDINARY LURE is a bunch of gaudy feathers fixed on a block of wood, with a cord and tassel (as shown at *fig.* 6). In the middle of the feathers is a forked piece of wood to which is tied a piece of raw meat. By accustoming the hawk to feed upon flesh tied to this lure, she soon learns to come to it immediately; and thus its chief use is obtained. The TABURSTYCKE and DRAWER are modifications of the same, merely using a stick instead of a cord. The LIVE LURE is usually a pigeon retained by a string attached to its legs by leather.

HAWKING GLOVES are made of stout tanned leather, with gauntlets coming up over the wrist. In the palmy days of falconry these were very gaily ornamented; but this is quite a matter of taste.

THE MEWS is the apartment in which the hawk is kept. This should be a shed open to the air on the south and west, but protected from the cold winds coming from the north and east In intense frost, windows are required, but usually the apertures may be left open day and night. When several hawks are kept, two or three of these apartments must be provided, in order

Fig 6

to suit the particular constitutions or conditions of each variety or species. Wooden blocks or perches must also be fixed in the ground; the former being mere cones of wood for the long-winged hawks, whilst the latter are for the short-winged hawks, and are cross-bars fixed at the top of posts, and having a piece of cloth or matting hanging down to the ground, by which the hawk is assisted in recovering his perch; and the leash is also prevented from being entangled by the hawk constantly descending on one side and ascending on the other. The floor should be of dry gravel, constantly renewed. Bow perches are preferred by some, and are insisted on by "Peregrine." They are usually ash-boughs bent into a bow and stuck into the ground, having a ring running on them to which the hawk is attached.

THE CAGE is used for removing the hawks from place to place. It is merely an oblong, square, or circle, of light wood, in the centre of which the falconer walks, supporting the weight by shoulder-straps, and steadying it with his hands. The cross-bars should be of a size suited to the feet of the hawks used, and should be of soft wood, or even padded with leather. A few light cross-pieces are added, to prevent the hawks falling inwards. The oblong cage is four feet six inches by two feet, and has four movable legs, by which to support it from the ground.

THE TECHNICAL TERMS used in falconry are the following:—

1.—THE PARTS OF THE HAWK.

The upper mandible	*The beak.*
The lower mandible	*The chap.*
The cere of the bill	*The cere.*
The nostrils	*Nares.*
The legs	*Arms.*
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The claws	*Pounces.*
The wings	*Sails.*
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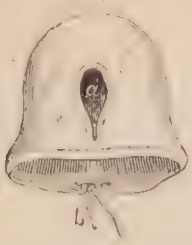

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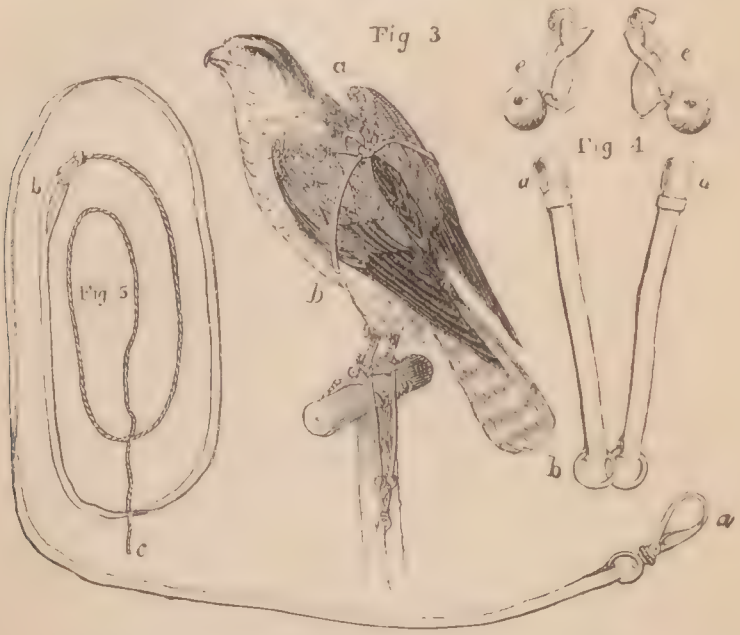

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The stomach	*The pannel.*
The lower intestines	*The glut.*
The ejected feathers, skins, &c.	*The castings.*

2.—Names given according to Age.

A young hawk from the nest is	*An eyess.*
A young hawk which can perch but not fly	*A brancher.*
A nestling hawk reared at liberty	*A hack-hawk.*
A young hawk able to take game	*A soar-hawk.*
Young hawks taken wild before Lent	*Lantiners.*
Young hawks taken after Lent	*Haggards.*
Young hawks taken in their migrations	*Passage hawks.*

3.—Names for various Actions or Processes.

Training the hawk is	*Reclaiming.*
Fluttering	*Baiting.*
Fighting with each other	*Crabbing.*
When the hawk sleeps	*She jouks.*
Her prey which she is flown at	*Her quarry.*
When she strikes it	*She binds.*
When she flies away with it	*She carries.*
When she plucks it	*She deplumes.*
The dead game is	*The pelt.*
When she pursues her game	*She flies at it.*
When, after soaring, she descends with it	*She trusses.*
When she soars and then descends	*She swoops.*
Her direct pursuit without soaring is	*Raking.*
When she leaves her proper game to fly at crows, &c.	*She checks.*
When the game flies into a hedge	*It puts in.*

4.—Terms used in Moulting.

Moulting the feathers is	*Mewing.*
When she has gone through her first moult she is	*Intermewed.*
A hawk with complete plumage is	*Summed.*
A hawk with incomplete plumage is	*Unsummed.*
A hawk in good condition is	*Inseamed.*
The reverse	*Seamed.*
Mending the feathers artificially is	*Imping them.*
Paring the bill or talons is	*Coping.*

5.—Terms used in Training and Flying.

When the hawk is obediently flying round in the air	*She waits on her master.*
The hawk is sent off by	*A whistle.*
She is brought back by	*A lure.*
Flying long-winged hawks at partridges from the wrist is	*Flying out of the hood.*
A couple of hawks	*A cast.*

Sect. 4.—Modes of Obtaining Hawks.

Hawks are either taken from the nest (*eyesses* and *branchers*), or they are trapped at a later period, when able to take game themselves (*lantiners* and *haggards*). By the adoption of the former mode they are much more tractable, but they do not fly at their game so boldly or so strongly; and, as taming the hawk is easy enough, whilst teaching them to fly at game is the chief difficulty in falconry, it is no wonder that haggards are preferred for hawking, when they can be obtained; since their full perfection in plumage is an essential to their employment as falcons; but they are of course more difficult to procure, since the hawk is a very cunning bird, and not very easily trapped. When the nest is found the eyess is taken at once, and reared more or less at liberty, or it is allowed to remain under the fostering care of its parents until it is nearly able to fly (*a brancher*), in which stage of development it may be taken by several active men in the trees surrounding that in which it is perched; or by springes of horse-hair, or by bird-lime. The two latter plans, however, injure the plumage a good deal, and should not be adopted unless it is impossible to procure the assistance of active men or boys. The nests, being usually in the same place in each succeeding year, may generally be found by those who have made the matter their business.

Haggards may be trapped in this country with the square-net, or the bow-net, but in either case great difficulty is experienced. The square is thus described by Sir John Sebright:—A net, eight feet in depth, and of sufficient length to inclose a square of nine feet, is suspended by means of upright stakes, into which transverse notches are made, and on which notches the meshes of the net are loosely placed, so that as soon as a hawk strikes against it the

net readily disengages itself and falls. The square inclosure is open above, and within it a living bird, usually a pigeon, is fastened as a bait. The colour of the net should assimilate as much as may be with surrounding objects, and the material should be a fine silk. The merlin, the hobby, and the sparrow-hawk may be taken in this way, but the larger varieties, viz., the gyr-falcon, peregrine, and goshawk, are seldom to be thus trapped, and they must be captured either by the bow-net or the hand-net, as follows :—The bow-net consists of a net of dark green silk, six feet square, which is attached to an arch of wood or metal fixed to the ground, as the handle of a common pail is to the pail itself. The bow works freely backwards and forwards in eyes which are attached to pegs firmly driven into the ground ; it is about four or five feet in diameter, and is fixed to the one side of the net by fine but strong cord, the other three sides being firmly pegged down to the ground, but so fastened as to allow the bow to be drawn completely over to the side opposite to that on which the pegs are driven into the ground. By this arrangement the bow-net is scarcely visible when set, the bow then lying on the ground upon the folds of the net, and the whole being concealed by grass, &c., but capable of being drawn over to the other side at the pull of the falconer, when his prey is within his reach. To effect this purpose a long line is attached to the bow, and a live pigeon, or other bird, is fastened down by a string close to the bow-net, so that when the falcon strikes the pigeon it is inclosed by the net, which is rapidly pulled over it by the falconer in concealment. The great difficulty lies in the habits of the hawk tribe, which will seldom strike a bird on the ground ; but with patience, I have little doubt that the bow-net would succeed. In this way PASSAGE-HAWKS, both of the long and short-winged birds, are caught on the Continent of Europe, and particularly on the heaths near Falconswaerd, in the autumn, as they pass southwards and to the east. A pigeon forms the usual bait ; but, in addition to this apparatus, which is the same as that used in England, a BUTCHER-BIRD (*Lanius excubitor*) is tied on the ground near the hut of the falconer, and two pieces of turf are so set up as to serve him as well for a place of shelter from the weather as for a retreat from the falcon. The falconer employs himself in some sedentary occupation, relying upon the vigilance of the butcher-bird to warn him of the approach of the hawk. This he never fails to do, by screaming loudly when he perceives his enemy in the distance, and by running under the turf as the hawk draws near. The falconer is thus prepared to pull the net the moment the falcon has pounced upon the pigeon. The short-winged hawks are all taken in the square-net, as already described for capturing hawks in this country. Sometimes the passage-hawk is taken by large hand-nets similar in principle to the landing-nets used in fishing, but very much larger. With these the hawk is caught by the falconer, who is concealed near a pigeon tied by a string to his hand, and suffered occasionally to fly a short distance. The bird attracts the hawk, who makes a swoop, and is dexterously caught by the falconer while his attention is thus fully engaged.

SECT. 5.—GENERAL MANAGEMENT OF HAWKS.

THE HOUSING is the domestic economy of the hawk, and upon it being properly carried out depend her health and spirits. I have already described the apartment or *mews* in which they are kept. It is strongly recommended by Sir J. Sebright that hawks should be *bathed* every five or six days in a running stream with a shallow edge. Before bathing, they should be lightly fed ; and if a running stream cannot be obtained, an artificial pond or a sunken pan of earthenware must be employed. In very hot weather a bath every other day is not too often. The hawks may be unhooded, and fastened by their *creances* to pegs stuck in the ground, and may be left by the falconer to bathe themselves, he retiring to some little distance. But they must not be suffered to indulge themselves as fully and as long as they like, nor must they be allowed to struggle or "bait" when confined by the *creance*, which they will do as soon as they begin to attempt to fly after bathing. The hood must therefore be again put on, and the hawks returned to their perches. Hawks must also be *weathered ;* that is to say,

they should be put out on perches which are erected in the open air, and then left, either hooded or unhooded, according to their degree of wildness, for many hours a day, but not in the rain. If wild and unruly, they should be well fed before weathering, which renders them sluggish and disinclined to *bait*.

The Rearing of the eyess and brancher must be carefully attended to. They must be kept warm, but should be handled as little as possible. Sir John Sebright recommends a hamper to be placed in a sheltered situation, about breast-high, in a tree or hedge. The bed of the hamper forms a good stage for the young birds to come out upon, in order to be fed. Beef or mutton forms the food, with the fat carefully removed, and the lean cut into oblong slender pieces. With these the young birds are fed night and morning, the falconer always using the same kind of cry as an accompaniment, which the young hawks speedily get accustomed to, and are impatient for their food as soon as they hear it. The long-winged hawks are usually fed on a high table, the short-winged on the ground. Birds, such as pigeons and rooks, are given occasionally as a variety, and also to stimulate the appetite for that kind of food. If young hawks are not properly fed, the feathers are not well developed, and what are called *hunger-traces* are left upon them. It is said that one day's starvation will leave a mark on the feathers. Sir John Sebright says, "The hunger-trace may be seen as a line of imperfection across the web of every feather, neatly marked, as if a razor had been passed across the wing." When this appears, a raw egg must be added daily to the flesh.

When the eyess is full-feathered and capable of flying, she is either confined to certain limits by her jesses and leash, or with her jesses and bell on she is suffered to be at large, and is then said to be *at hack*. The hack-hawk must be carefully fed and watched, and if she does not come to her usual feeding time, she must be sought for and retaken by means of a bow-net, or some other device, such as horse-hair springes, &c. Of course the neighbours should be requested to respect the hack-hawk, and not to take advantage of her comparative tameness. As soon as she begins to hawk for herself, she must be confined to the length of her leash, or she will assuredly be lost. But if care be taken to feed her very early in the morning she may be left at liberty for a long time, as hawks do not fly at game unless hungry.

The Mewing, or moulting, must be carefully attended to, as this process is often accompanied by considerable fever and loss of appetite. The moulting commences early in the autumn, and at that time the hawks should be examined for vermin, and, if any are present, treated according to the plan hereafter recommended. The apartment must be warm, but not close; airy, yet free from draughts; the hood should be avoided, if possible, and the beak and talons should be closely *coped*, to prevent her from injuring her young feathers. Bathing occasionally is necessary, but in cold weather the water must have the chill taken off. Mewing-hawks should be well fed, and should be encouraged to come to the fist as often as possible, for the sake of exercise. Hawks are not to be suffered to fly for six weeks after the completion of the moult.

Imping is the repairng of broken feathers; and for this purpose the falconer should have a good store of all the wing and tail feathers of all the various species which he has under his care. When a feather is broken it must be repaired as follows:—The broken feather is to be obliquely cut off, and the artificial one exactly shaped to fit it; then, by inserting two needles, and using a little solution of isinglass in spirit of wine, the two may be strongly spliced together. The old falconers used merely a needle dipped in vinegar or salt and water, and trusted to the rust arising from it for the retaining the two parts in apposition. Diamond cement and white of egg have been recommended; but I have found the solution of isinglass make so secure a joint that it is difficult to detect the point of union; and by a little care, all soiling of the adjacent feathers may be avoided.

The Conditioning of the hawk is the process of dieting and physicking her, so as to replace by art what she loses of her natural state. When at liberty she takes no food without feathers or fur, and naturally requires their stimulus to her stomach; usually also she

feeds on her prey while lying on the ground, and in doing so she gets some small portion of earth with the feathers and flesh. Hence the falconer, to imitate his great prototype, gives his charge feathers and small bones mixed with the meat, and occasionally a little fine gravel; or, if he has not these readily at command, a little tow or wool. The feet of fowls, rabbits, and hares with the fur on answer this purpose well, and should be given at night, as the hawk is usually dull till the *castings* have returned, and, as they cannot pass the mouth of the hood, this must be kept off till the casting appears. All the hawks should have a full meal, called a *gorge*, every four or five days; which is their natural mode of feeding, with light feeding on the intermediate days. The condition is known by the weight or handling, and the amount of food is regulated accordingly.

Medicines are sometimes required, and especially purges, consisting of from three to four grains of rhubarb, jalap, or aloes, mixed with the meat. If the dose is not active enough it must be increased; and sometimes ten or twelve grains will be taken by the larger hawks without any purgation. If the hawk is relaxed, a little chalk and a grain or two of cinnamon must be given with the meat. When the castings are returned in a moist state, with small pieces of flesh adhering to them, or covered with mucus, it shows that the stomach is disordered and weak. For this condition five grains of extract of camomile with some cinnamon should be given after a dose of rhubarb daily. If the *mewtings or fæces* are black, a grain or two of mercury with chalk should be given with two or three of rhubarb, every other day, till they become of the natural colour. Sometimes the hawk has an attack of wheezing, for which from a quarter to half a grain of ipecacuanha may be given, or a little syrup of coltsfoot. If they are afflicted with worms, as much finely-powdered glass as will lie on the point of a large penknife is to be mixed with an equal amount of salt, and put on a piece of flesh and given to the hawk daily.

For Vermin, fumigations of tobacco must be used, taking care to exclude her head; or powdered sulphur may be well sprinkled among the roots of the feathers by means of a powder-puff. Fumigation is effected by tying a large bag round the back of the hood, and then introducing into the bag the fumes of burning tobacco. Care should be taken that there is no escape between the head of the bird and the hood, and to prevent this some soft cotton should be gently introduced at the back.

Sect. 6.—Training the Eyess and Brancher Falcon.

Hooding commences this part of the education of the hawk, and should be begun as soon as the young eyess is fully feathered. When first hooding her, the brail (page 290) should be used, and continued till the hood is borne with patience, in order to prevent the bird from *baiting* and spoiling her feathers. If very refractory, the constant dropping of water upon her will soon bring her to, conjoined with deprivation of sleep and low diet; but this is seldom required in the eyess. The next thing is to accustom her to the bells, jesses, and leash, which she bears well enough with her hood on, but without it she will soon pull them to pieces, unless prevented by careful watching. The water-dropping acts well here by taking her attention off her feet; but it is not safe to use it freely, except in warm weather. The perch to which the hawk is attached by the leash is usually a cross-piece of soft wood, or the bow-perch with a ring sliding on it, or a solid cone of the same material, to the lower part of which the end of the leash is attached, the latter being used for long-winged hawks only. The next thing to be done is to accustom the hawk to the fist, on which she should be placed first while in her hood; after removing this she is in course of time reconciled to her master, and, if rewarded with a piece of meat, soon learns to bear his presence without *baiting*. Every time she is wanted to bear any restraint, or to obey her master in any way, she should be rewarded for compliance by a choice morsel. In this way, however much she may resist at first, she finally submits to hood, jesses, and bells, and readily comes to the fist, either to be fed, or simply to the whistle, which invariably accompanies that act. When

the hawk will come the length of her leash to the fist, the creance may be added to the former to any length, and the hawk may be suffered to fly short distances, that is, to the length of her creance, from which she may be enticed back to the fist by the whistle. All this is very easy with the eyess or brancher, but with the haggard it can seldom be fully accomplished, and the falconer must content himself with breaking his hawk to *the lure;* and even that is sometimes difficult to accomplish.

The Lure is useful for two purposes: first to teach the hawk to fly at game; and secondly, to recover her in case of failure in her flight; or to distract her attention from the game which she is not wanted to devour, by giving her her accustomed food instead. The first step is to feed the hawk regularly on the lure, and when this is freely taken at a short distance from the hawk, gradually increase the interval, but very cautiously, for fear of alarming her fears. Next take the hawk out when very hungry and let an assistant swing the lure round his head steadily, and at the full length of the cord; upon this the falconer casts off his hawk with the usual whistle or halloo, still holding the *creance*, and the assistant suffers the lure to fall to the ground for fear of injury to the hawk by striking it in the air, with the two strings attached. When this lesson is perfect the assistant, instead of suffering the lure to fall, withdraws it, and disappoints the hawk, which flies by him and then returns, when he may be suffered to strike the lure and feed upon it. In process of time the creance and jesses may be removed and the hawk enticed to the lure from a considerable distance, and may then strike it in the air while swinging round the head of the assistant. After a still greater time the hawk becomes so perfect that she will circle round the head of the falconer, waiting for the lure to be thrown, and is then said to *wait on* him perfectly. While the hawk is feeding on the lure, the falconer should encourage her, and suffer her to finish without alarm, by which she will be shown that she might do this without fear, and will readily suffer herself to be taken after flying. She should also be accustomed to horses, men, and dogs. When this part of her education is accomplished, the hawk is ready for entering to her game.

Entering to her Game is effected by letting loose a partridge or thrush, confined by a creance, at the time when the hawk is expecting the lure; she soon spies her prey and strikes it to the ground, and may be suffered to indulge her appetite without restraint, while the falconer walks round and caresses her. After this she is ready to fly at wild game; but in case of her failure to strike, a live bird should always be carried into the field, which may be thrown up, confined by a creance.

Sect. 7.—Training the Haggard Falcon.

This is not quite so easy a process as that which I have already described for the eyess. The first thing to be done is to put on the hood, jesses, and bells, and to brail the wings; then carefully *cope* the beak and talons with nippers and file. During the early days their meat, which should only be given once a day, must be washed with water, in order to reduce their courage; and they must be deprived of sleep, either by continual watchings of the attendant falconer, or by water dropping from above on their backs. If the hawk is very wild, the wearing of the hood must be postponed for some little time till the courage is somewhat subdued by starvation and want of sleep; but the sooner it is put on the better. The falconer must be incessantly occupied with his charge, and by soothing treatment at last teaches her to bear her feathers to be touched without *baiting*. The falconer must live almost constantly with *haggards* before they get accustomed to him, but when they own his presence they "rejoice" in him, even more than the eyess. When the hood is borne pretty well, and the hawk is quiet on her perch, she may be fed a little more fully, but not yet upon unwashed meat. Sometimes there is great difficulty in getting the hood on the haggard at all, as the resistance is so great as to threaten destruction to the feathers, or even the life of the bird. In this case great tact is required, but it may always be accomplished by patience and perseverance when joined with starvation and want of sleep.

When the hood is well borne, and the hawk becomes tamer and feeds readily in the presence of the falconer, she may be tempted to approach by throwing her her food at some little distance from the falconer, when she will come nearer and nearer to him day by day, and at last feed freely close to him. Then the lure should be used as the place of feeding, and at last the hawk should be fed slowly on that useful apparatus. Finally, she should be taken out and accustomed to strike the lure in the field; but the haggard can seldom be made to *wait on* the falconer, nor can she be recovered after an unsuccessful flight by its means, but a live pigeon must be let fly, with a *creance* attached.

ENTERING THE HAGGARD is a much more tedious process than the corresponding part of the treatment of the eyess, because so much more care is required lest she should escape. Whatever game she is intended for should be let fly with a string attached; and if this is the heron, the beak of that bird must be guarded with a piece of the elder-tree passed over its point. When a pigeon is used for entering the hawk she must afterwards be disgusted with its pursuit, by letting a succession of them fly at such distances from her as to be quite secure, and in this way tire her out. In the same way hawks may be broken from any kind of birds which they are wished not to pursue.

SECT. 8.—TRAINING THE SHORT-WINGED HAWKS.

This is the same as regards feeding, and the use of the bells, jesses, and leash; but the short-winged hawks are flown from the fist, and are never hooded, except for a very short time when first taken, or when on the cage. They therefore require to be made as tame as possible, by constantly carrying on the wrist, and by tiring them out in allowing them to pull at a hare's foot or bare pinion-bone.

SECT. 9.—PREPARATION FOR FLYING.

All hawks should have a slight meal on the day before flying them, more or less, according to the condition and behaviour of the particular bird. Subsequently to flying they should be *gorged;* after which two clear days must intervene before the hawk is fit to be flown again. The feeding should be in the field immediately after flying. Half-reclaimed hawks must be flown very hungry; but excess in this respect does not answer the intended purpose, because it induces the hawk to hover round the falconer in the hope of being fed, rather than to pursue the game at which she is intended to fly.

SECT. 10.—FLYING THE FALCON, OR LONG-WINGED HAWKS.

HERON-HAWKING.—The falcon, which must be either the gyr-falcon or the female peregrine, having been previously entered to the heron, as already described, and fed according to the directions given in the last section, may now be taken into the field to wait for the appearance of the heron. Sir John Sebright thus describes the mode of flying peregrine falcons at herons, as practised in Norfolk:—"A well-stocked heronry in an open country is necessary for this sport, and this may be seen in the greatest perfection at Didlington, in Norfolk, the seat of Colonel Wilson. This heronry is situated on a river, with an open country on every side of it. The herons go out in the morning to rivers and ponds, at a very considerable distance, in search of food, and return to the heronry towards the evening. It is at this time that the falconers place themselves in the open country down-wind of the heronry; so that when the herons are intercepted on their return home, they are obliged to fly against the wind to gain their place of retreat. When the heron passes, a *cast* (a couple) of hawks is let go. The heron disgorges his food when he finds that he is pursued, and endeavours to keep above the hawks by rising in the air; the hawks fly in a spiral direction to get above the heron; and thus the three birds frequently appear to be flying in different directions. The first hawk makes his stoop as soon as he gets above the heron, who evades it by a shift, and thus gives the second hawk time to get up, and to stoop in his turn. In what is deemed a good flight this is frequently repeated, and the three birds often mount to a great height in the air. When one of the hawks seizes his prey, the other soon *binds to him*, as it is termed, and, buoyant from the motion of their wings, the three descend

together to the ground with but little velocity. The falconer must lose no time in getting hold of the heron's neck when he is on the ground, to prevent him from injuring the hawks; it is then, and not when he is in the air, that he will use his beak in his defence. Hawks have indeed sometimes, but very rarely, been hurt by striking against the heron's beak when stooping, but this has been purely by accident, and not, as has been said, by the heron's presenting the beak to his pursuer as a means of defence. When the heron flies down-wind he is seldom taken; the hawks are in great danger of being lost, and as the flight is in a straight line, it affords but little sport."

Kite-Hawking.—Some years ago these birds (*Milvus regalis*) were much used in falconry by the Earl of Oxford, near Alconbury Hill. They are abundant in open countries, but require the gyr-falcon or the female peregrine. The great owl, with a fox's brush tied to it, was used as the lure to draw down the falcon after an unsuccessful flight; the object of the brush being to impede the flight of the owl.

Hawking Rooks requires, as in heron-hawking, a cast of falcons. The tiercels are too small, and haggard or passage-hawks must be employed, not eyesses, unless the latter are very bold and strong; and when this is the case they are superior in all respects to the haggard. The rooks mount like herons, but not so high. They must be found in an open country, on the leeward side of their rookery, so as to compel them to fly up-wind.

Wildfowl may be flown at by the various kinds of falcons, according to the size and strength of the fowl. Thus, geese require the gyr-falcon; but both the game and the hawk are so rare as scarcely to require alluding to. Ducks, widgeon, and teal may be taken with the peregrine tiercel, and either the eyess or the haggard may be employed. The hack-hawk is the variety usually employed, being bold enough, yet sufficiently reclaimed for the sport. Sometimes in the old days of falconry, half-tame ducks were let loose from the neighbourhood of a brook, and were then taken with the goshawk; but it must have been a very poor imitation of more noble varieties.

Game-Hawking.—For this sport eyesses are used, and an open country is required. The falconer must be on horseback, with a steady pointer or setter, and one or two spaniels, under good command. When a partridge or grouse is marked-down or pointed by the dog, the hawk is unhooded and cast off. She then *waits on* the falconer, if a good bird, at a considerable height. If she ranges too far; she may be brought nearer by the halloo and lure; but these must be used with great discretion. This, and the not giving the hawk sufficient time to mount, are the most common faults in the falconer. It is not necessary that the hawk should be within two or three hundred yards of the birds when they rise, if her head is turned towards them, and she is high enough. High-ranging dogs are the best, as the birds lie better to them. The hawks are to be cast off as soon as the dog points with any certainty, as the rise of the hawk prevents the bird from springing. When the partridge or grouse rises, the hawk will dart down with great velocity, and either take it at once or force it into covert. If the latter, the hawk rises again into the air, and waits for the falconer to push up the bird. The falconer now attends to his hawks, and the assistant proceeds to push out the bird. As soon as the grouse or partridge is taken, the falconer alone is to approach his charge; at first walking round her, and gradually drawing near with great caution. At length, by kneeling down, whistling as at feeding-time, the arm may be extended *gently*, and, by taking hold of the partridge, both may be placed on the fist, after which the hawk may be suffered to devour the head, and is then hooded.

If a young hawk does not take the partridge in her first swoop, and if the bird cannot be put up again speedily, after she has *put it in*, a live partridge must be thrown up from a bag; and if it is her first flight, the hawk should be suffered to eat it. This will prevent her *carrying*, which is caused more by her fear of being deprived of her prey than by wildness, as is generally supposed. When the grouse or partridges are very wild, the company should be drawn up in a line at a distance of 60 yards from each other. They should then gallop across the country, with the falconer in the centre of the line to regulate the pace, which he does accor-

ding to the position of the hawk which is *waiting* on him. When the birds will not lie to the dog, the hawk is sometimes unhooded and cast off, the moment they rise; this is called *flying out of the hood.*

LARKS may be taken by the merlin and hobby, which should be used on the same principle as the larger varieties of the falcon tribe. These little hawks mount and swoop in the prettiest style imaginable. Nothing can be more elegant than this sport; but it has not received that attention which it deserves, partly perhaps because female merlins, which are best suited to hawking larks, are bold enough to take pigeons and young partridges. Male merlins, however, are only capable of taking larks; but those who keep this kind of hawk should not therefore condemn the males, as they show extremely good sport.

SECT. 11.—FLYING THE SHORT-WINGED HAWKS.

GROUSE AND PARTRIDGES are taken by the goshawk, and even by the sparrow-hawk, with one of which Sir John Sebright says that he took a partridge only ten days after her capture by the bow-net. But the sport is very different from the partridge-hawking already described.

PARTRIDGE-HAWKING.—Before shooting flying was introduced, the goshawk was very commonly used for the purpose of taking the partridge; and he may be made to take a good deal of game, and even to fly in a wood. Sir John Sebright expresses his surprise at anyone seeing any sport in hawking partridges with the short-winged hawk, in which opinion I beg leave to join; and as it was done only for the purpose of procuring game, which may now be much more readily shot, it is no wonder that its use has been entirely superseded by that of the gun. When a covey rises, if the birds are very small, the goshawk may possibly take one at the first flight, but if the partridges are tolerably strong, they will fly twice as fast as this hawk. The goshawk follows the covey at a distance, and in the manner of an owl. When they take refuge in a hedge (for these hawks are too slow for the open country), the goshawk marks the spot with the greatest precision, and after having *made her point*, by rising perpendicularly in the air, she takes her stand upon a neighbouring tree. If this situation be favourable she is allowed to retain it, or otherwise she is called down to the fist. In either case the birds are to be driven out, and she either takes one at this their second flight, or again drives them into a hedge, and takes her stand as before. A great many partridges are taken in this way by the dogs in the hedges, to which they are driven by the hawks, over and above those killed by the hawk herself.

LANDRAILS may be taken in the same way, but as they are of slower flight, goshawks used to them will not fly at partridges.

PHEASANTS, also, may in like manner be taken by the goshawk.

RABBITS are very easily taken by the goshawk, or even the sparrow-hawk; but the latter is hardly strong enough, and is sometimes carried off into the earths of the rabbit, and permanently injured or killed.

The above directions are scarcely sufficiently minute to enable the pupil to carry hawking into practice, and I should advise him to procure Peregrine's "Practical Falconry," or Brodrick and Salvin's "Falconry in the British Isles," before he makes the attempt.

SECT. 12.—EXPENSES OF HAWKING.

The market is now so limited, that it is quite impossible to set any bounds to the expense which must be incurred in procuring the most rare and valuable hawks. The sparrow-hawk may be easily obtained, and the merlin also is tolerably common; but if either of the larger long-winged hawks is desired, considerable difficulty and expense must be encountered.

"Peregrine" values the various kinds as follows:—

	£	s.
Peregrines (Eyesses) . . .	1	10
„ trained to game .	10	10
„ trained to pigeon	5	5
Goshawks (untrained) . .	4	0
Merlin (eyesses)	0	7

PART I.

THE PURSUIT OF WILD ANIMALS FOR SPORT.

BOOK V.—ANGLING.

CHAPTER I.

VARIETIES OF LAKE AND RIVER FISH.

THE SALMON (*Salmo salar*) stands at the head of British fish, as affording the best sport to the angler, and the greatest treat to the *gourmet*, its flesh being rich in flavour and of a beautiful red colour. It is handsome in its proportions, and attains to a very large size, salmon of 50 lb. and upwards being occasionally captured. One huge fish, that came into the hands of a London fishmonger in 1821, is recorded by Mr. Yarrell as being of the enormous weight of 83 lb.; and several above 70 lb. are on record. The colour of the salmon when in season is a purplish-black on the back, softening into a silvery-grey on the sides, and ending in a pure white on the belly. When out of season, these colours are represented by a dull brown on the back, reddish or pale-brown on the sides, and reddish-white on the belly. The male has several small, irregular, and copper-coloured spots on his sides. These in the female are larger, darker, and generally round or lunated. As the spawning season approaches the fish change in colour, the male becoming more and more of a coppery hue, and the female darker and darker, and hence the names of red and black fish which are commonly applied to unseasonable salmon. The male, moreover, has at the spawning season a large hook growing upwards from the lower jaw, which is used in the battles for the female fish and disappears after the spawning season is over. The head of the salmon is small; upper jaw longer than the lower; body slightly arched on the back, which is broad and muscular, and gradually tapering to the tail, which is broad, and ends in a crescentic curve, that decreases as the fish increases in age, until, in an old fish, the tail becomes nearly or quite square. In the salmon, as also in the salmon trout, bull trout, and common trout, there are teeth on the vomer, or central bone of the roof of the mouth, as well as on the side bones of the palate, the tongue, and the mandibles or jaws.

Salmon feed freely on fish and mollusca, but digest their food so rapidly, that when opened their stomachs are generally found empty. Their growth is proportionate to the quantity of food which they can procure, and hence when they reach the sea they increase in size in a marvellous manner, during a very short period. For instance, a kelt, or spawned salmon, was caught while descending the Tay by the late Duke of Athole, who had it marked and returned to the river on the 31st of March. Five weeks and two days afterwards the same fish was caught again on its way up the river from the sea; and in this short space of time it had more than doubled its weight, which was now found to be 20¼ lb.

The successive stages of development of the salmon have been the subject of much controversy; but the experiment of the late Mr. John Shaw, of Drumlanrig, and Mr. Robert Buist's salmon-breeding operations at Stormontfield, have had the effect of clearing up much that was very mysterious.

The known facts may be stated as follows:—The fry are hatched chiefly in the spring and early summer, after an interval, from the time of spawning, of from 60 to 140 days, according to the temperature. The young fish, which is marked on the sides with conspicuous transverse bars of a dark colour, grows very slowly during the period it remains as a *parr*, or, as it is called in different districts, *pink*, *lastspring*, *fingerling*, and by various

other names. At the end of a twelvemonth, when about four inches in length, the parr will probably assume the *smolt* dress, and become uniformly coated with silver scales, on rubbing off which the "parr-marks" or bars will still be visible. This change in dress indicates that the young fish is about to commence its first migration to the sea. But although a large proportion (probably one-half) of the samlets thus become smolts at the end of the first year, the remainder, hatched from the spawn of the same parent fish, and kept under exactly the same conditions, continue unchanged in appearance, and exhibit not the slightest disposition to quit their usual place of abode, while their brethren voluntarily take their departure, and descend to the salt water. In the course of six or eight weeks from this exodus, some of the young fish are found to return as *grilse* of from two to five pounds, and occasionally of eight or nine pounds in weight, according to the length of their stay in the sea; and there is one instance on record, as subsequently mentioned, of a grilse weighing 14½ lb. The parrs of the same brood that stay behind increase but little in size for the next year, when again a large proportion assume the smolt livery, depart, and become grilse; the residue of the parrs retaining their distinguishing marks and comparatively diminutive size for the third year and even longer—but how long could not be definitely ascertained at Stormontfield, as the pond, being required for a newly-hatched brood of fry, the remnant were turned adrift into the Tay, to shift for themselves.

The above facts will show how great a diversity of results there is even in fish of the same brood, and consequently how easy it was for people to get to loggerheads when their knowledge was imperfect; but the matter is still further complicated by what has been learned in Ireland. In December, 1859, Mr. Glover, the proprietor of the Doohulla fishery, in Connemara, obtained from the Galway river some salmon ova, which were hatched in March, 1860; but instead of the majority of the young fish departing in the spring of 1861, as anticipated, none did so, but remained till they were two years old, when seven hundred of them were marked and nearly the whole of them went to sea; a few, however, remained, some of which had not become smolts at the end of June, 1863, and consequently would not depart before their fourth year; and except that they were eight inches in length, they did not differ from those which had long before changed to smolts.

A more curious fact, however, yet remains to be mentioned. It has been already stated, that the grilse usually return from the sea in about a couple of months after they enter it as smolts; but at Doohulla such was not the case, and as salmon did not previously exist there, and the expected fish were anxiously watched for, it is scarcely possible that they could have returned unobserved. The whole of the young salmon, with the exception of about seventy, went to the sea at the end of April, 1862, and nothing was seen of them until the 7th of June, 1863, when a marked grilse of 4½ lb. was caught, and ten others, varying from 2 lb. to 7 lb., were taken in the next fortnight. The contrast between this and the result in another Irish river, the Laune, in Kerry, is somewhat remarkable. Mr. H. W. Dodd, of Killorglin, marked a number of smolts and turned them into the river during the week ending the 20th of April, 1863; on the 1st of June (forty-two days after the first smolt was liberated) a marked grilse of 4½ lb. was taken, followed by others increasing in weight till the end of July, when a fish of 8½ lb. was caught; and in the ensuing season (1864) one of the marked smolts was captured as a salmon of 16½ lb. So also in the Tay, some marked smolts were turned in on the 24th of May, 1863; on the 16th of August one of these was taken as a grilse of 9 lb., and two others were caught in July, 1864, as fine-grown salmon of 18 lb. and 21 lb. respectively, not to mention various smaller marked fish that were caught in the interval. The Doohulla fishery, consisting of several lakes, with a small connecting stream, and sluggish peaty waters, is anything but the beau-ideal of a salmon river; and it is possible that difference of circumstances may have something to do with the tardy development there, as compared with the other rivers; but the cause of the difference between members of the same brood is a mystery, and appears likely to remain one.

The *grilse* having, however, ascended the river as previously mentioned, and deposited its spawn, returns to salt water to recruit, and after a second rapid growth, re-enters its native stream with the full title and dignity of *salmon;* the fork in the tail of the grilse has now diminished to a curve, and in future years, if he escapes capture, will almost or entirely disappear.

The spots chosen by the salmon for the deposition of their spawn are gravelly beds in shallow parts of the river or its tributaries. The female having made her selection, works a groove in the gravel by the vibration of her tail, and there she and the male deposit their spawn at the same moment, retiring from time to time to deep water to rest, and resuming until the whole of the eggs are buried in the gravel, so that the process frequently extends over several days.

The size of salmon depends less on age than on the river in which they are bred, and the fish which have been left as breeding-stock. In some rivers where the means of capture have become so effective that none but small fish could escape and reach the spawning-beds, the result has been that in the course of a few years none but small fish were to be found in the river. The Tay and the Tweed are both noted for the production of large fish, and there have been several extraordinary captures with the rod in those rivers of late years, besides large fish taken by the net. In November, 1867, Captain Tinkler killed with single gut on the Tweed a salmon of 51 lb., measuring exactly as many inches in length as it was pounds in weight; and in the same season that gentleman also killed on the same river the largest grilse upon record, viz., 14½ lb. In March, 1870, Mr. John Haggart, of Stanley, killed in the Stanley waters, on the Tay, a salmon 57 inches long, and weighing 61 lb.; but it was not the largest ever taken by the rod, as Yarrell records that the Earl of Home killed one of 69¾ lb. on the Tweed.

The *fence months* for salmon vary greatly in the United Kingdom. In England the general close-season for nets extends from Sept. 1 to Feb. 1, and for rods from Nov. 1 to Feb. 1; but efforts having been made by the conservators of some late rivers to obtain a modification of the law, the last Act gave the boards power to frame bye-laws, altering the close-time, subject to the approval of the Home Secretary. In Scotland and Ireland the close-time varies in different rivers. In the Thurso, fishing begins as early as the 15th of January, while in others it does not open until April; and in the Tweed rod-fishing does not end till the 30th of November.

The Salmon-Trout, Sea-Trout, or White-Trout (*Salmo trutta*) differs from the true salmon in being rather shorter in proportion to its length, and its tail being smaller and squarer at the margin as compared with that of a salmon. The teeth are also more slender and numerous than in the salmon. The salmon-trout does not grow so large as the salmon, yet it has been known to reach nearly 25 lb.; but in colour and flavour the flesh is very similar, although not quite so rich; and the two fish are very generally confounded, and are sold indiscriminately by the fishmongers. In habits, haunts, &c., the salmon-trout much resembles the salmon, and it is one of the gamest and most sporting of fishes which the angler has the good fortune to meet with.

The Bull Trout, Grey Trout, or Sewin (*Salmo eriox*), is less elegant in shape than the salmon, being thicker about the head and shoulders, or more "bull-necked." The tail end of the fish is also more bulky, and the tail squarer, than in either the salmon or the salmon-trout; and as the central rays of the tail lengthen with age, the outer edge becomes eventually convex instead of concave; hence, the name of "round-tail" by which this fish is likewise known. The teeth are both longer and stronger than in the salmon, the scales smaller, and the flesh paler, coarser, and far inferior in flavour. It is also much less valuable as a sporting fish, as it will seldom take either fly or bait when in good condition. This fish is found in large numbers in the Tweed, where it is as numerous as the salmon. In some of the Northumbrian rivers it has multiplied at the expense of the salmon, till the latter has become almost extinct, and great pains have been recently taken to extirpate the bull trout, in order to introduce its more valuable congener. It is also found in many rivers of England, Scotland, and Ireland.

We have followed Mr. Yarrell in designating this fish as the sewin of Wales; but Dr. Günther states that there are specific distinctions between *Salmo eriox* and the sewin, and he has accordingly given the name of *Salmo cambricus* to the fish closely resembling the bull trout that is found in the rivers on both sides of the Bristol Channel. The distinction is, however, one for the naturalist rather than the angler.

The Common Trout (*Salmo fario*) is distinguished by the length of the lower jaw being greater than that of the upper. It weighs from a quarter of a pound to four or five, or even, in rare cases, up to twenty pounds, the Thames furnishing trout of very large size with comparative frequency. In shape, the trout is not quite so elegant as the salmon, but it is, nevertheless, a very beautiful fish. The snout is more blunt, and the jaws are thickly supplied with teeth, inclining inwards and very sharp. In colour it is of a pale yellowish grey, darker on the back, and nearly white on the belly. It is marked on the sides with several distinct round spots of a bright red colour, each surrounded by a halo of pale grey; occasionally a black spot occurs, especially on the fins. These are of a purplish-brown colour, except the ventrals, which have a reddish tinge. Trout vary so much in different rivers, that no one description will minutely apply to all, but the above will give the general characteristics of the species. The trout feeds like the salmon, and in habits resembles that fish in all respects but the migration to the sea. He is generally found in swift and gravelly streams, and rejects those of an opposite character, though he is occasionally to be met with there, in consequence of the artificial and compulsory interference of man. The spawn is deposited in the same way as that of the salmon, but as the young do not migrate, their successive changes and growth cannot be so clearly made out. The spawning-time begins, in some few cases, in September, but it is not commonly in full operation till October or November, after which it may be said to be completed, although occasionally trout in spawn are found a month or two later. The trout is, for the most part, in full season from April to September, but the time varies in different rivers so much, that it is impossible to lay down any decided rule. When in high perfection, its spots are peculiarly brilliant and distinct, the head is small, the body being plump and thick, and the belly silvery.

The Great Lake-Trout (*Salmo ferox*).—Mr. Yarrell defines this magnificent fish by its proportions, which he says are as follows:—The head is to the body as 1 to 4½; depth of body to length 1 to 4; teeth large, strong, and numerous, and in five lines. It reaches nearly the same proportions as the salmon, from which it differs in not migrating to the sea. The flesh is less highly flavoured, and of a much paler colour.

The Char (*Salmo umbla*) is only found in a few of our northern lakes, and in those of Ireland. Several varieties are known, as the *silver char*, the *gelt char*, the *red char*, and the *case char*, according to the peculiar shade of the colour. It is a beautiful fish, but it is not clearly described, and authors vary as to the peculiarities of its colour and formation.

The Grayling (*Thymallus vulgaris*) is found only in certain streams, and particularly those descending from granite mountains. It is a very elegant fish, of middle size, seldom exceeding fifteen or sixteen inches, and slender in proportion. The head is small; upper jaw the longer of the two; teeth small, and spread over the roof of the mouth. The colour of the back varies from a blackish-green to blue, gradually shading into a silvery-grey towards the belly. When first taken, there are several black spots on the back, and some iridescent patches of gold colour on the sides; this appearance rapidly fades, and the general colours soon soften down. The scales are proportionally large. Sometimes, though rarely, the size is greater than that given above, and, in some few cases, grayling have been taken of four or five pounds weight. This is a very bold fish after the fly, but it does not afford such good play when hooked as the trout. The season is from September to March, after which they begin to spawn.

The Gwiniad (*Coregonus Pennantii*), found in the lakes of Scotland and Ireland and in those of Cumberland; the Powan (*Coregonus clupeoides*), found only in Loch Lomond and one or two

other Scotch lakes, the VENDACE (*Coregonus albula*), found also in the Scotch lakes, and the POLLAN (*Coregonus Pollan*), found in Lough Neagh, in Ireland, are four closely allied lake-fish which are included among the *Salmonidæ*, but have prolonged snouts, resembling the herring. Hence, the first has been called the fresh-water herring. They none of them afford sport for the angler, and are only taken with the net.

THE PIKE OR JACK (*Esox lucius*).—This voracious fish is met with in the gently-flowing rivers and ponds of Great Britain, and is called a pike when above four or five pounds in weight, and a jack if of less than that size. It is a very ugly-looking fish, the head large, the jaws long and savage-looking, and armed with several hundred teeth; the tail is lunated; the colour is a pale olive-grey, becoming deeper on the back, and marked on the sides with several yellowish spots or patches. Sometimes the pike reaches an enormous size. Mr. Pennell, in his "Book of the Pike," mentions several that are said to have exceeded a hundred and fifty pounds in weight; and the captures of fish of twenty pounds and upwards are recorded every season. The food of the pike consists of fish, frogs, rats, the young of waterfowl, or, in fact, anything in the shape of animal food. Pike spawn in March and April, among the weeds of their favourite haunts. Like all other fish, they are only in high season for the few months before this process is commenced; the flesh is white, and of good flavour, resembling the haddock.

THE CARP (*Cyprinus carpio*) is the type of a family all of which have a small mouth without teeth, except on the pharyngeal bones, that are opposed to a kind of bony plate at the upper part of the gullet. The *Cyprianidæ*, or Carp family, include barbel, tench, bream, rudd, roach, dace, bleak, gudgeon, minnow, and other less-known species hereafter mentioned. These are the least carnivorous of fishes, their food consisting of soft vegetable matter, with worms and insects, and rarely small fish. All the members of this family have but one dorsal fin, instead of two, as in the trout, perch, &c. The common carp is said not to be a native of Britain, but, with the tench, and others of the family, to have been introduced by the monks for the purposes of the table during their fasts. It is a very prolific fish, and will live to a great age and attain an enormous weight. In this country fish of about twenty pounds have been taken, but on the Continent they are recorded to have been caught of thirty and forty pounds weight, and one is even said to have reached seventy pounds. The British angler may, however, think himself fortunate if he catches one of four or five pounds. The carp is an inhabitant of lakes and ponds and the stillest parts of rivers, and feeds on worms and insects. It is a wary fish, and a very uncertain biter, but when hooked affords capital sport. The back of the carp is arched and thick; the scales are large, colour golden olive-brown, darker on the head, and diminishing to yellowish-white on the belly; fins dark brown; tail brown and forked; the mouth has a short barbule on each side both above and below. The *Crucian* and the *Prussian* carp both differ in some respects from the common species, but as they are both comparatively rare, it is unnecessary to give detailed particulars of each, and we need only state that they have no barbules, and do not attain so large a size as the common carp.

THE BARBEL (*Barbus vulgaris*) has received its name from its beard, which is much more prominent than in the carp. It consists of four barbules, all on the upper lip, one pair being at the point of its greatly elongated nose, and the others near the angle of the mouth. The scales are of medium size, colour of head and back greenish-brown, becoming more yellow at the sides, and changing to white on the belly; dorsal fin and tail brown, tinged with red; other fins flesh-coloured. They are gregarious, frequenting the weedy parts of rivers in shoals in the warm weather, and retiring into deep water in the winter, when they remain almost inanimate. They feed on worms, slugs, small fish, &c., and afford good sport to the bottom-fisher, not being so shy as the carp.

THE TENCH (*Tinca vulgaris*) is a thick fish, resembling the carp in shape, and having two very small barbules, one at each corner of the mouth. Its scales are small and thin, and covered with a thick viscid slime; colour greenish-olive, with a tint of gold, and getting

lighter towards the belly; fins dark brown, and tail nearly square. The tench thrives in stagnant or slowly changing ponds, especially in loamy or rich soils. It spawns about June, is very prolific, and as the young grow rapidly, a pond soon becomes stocked with these fish, which are very superior in flavour to the carp. It has been known to grow to the weight of a dozen pounds, but one of half that size is unusually large.

The Bream (*Abramis brama*) is more like a flat-fish than any other of the freshwater fish, except the flounder. It is very narrow across the back, which, as well as the belly, is much arched, forming altogether almost an oval. It frequents still water, like the pike, and is often found in the same rivers and ponds as that shark in miniature. The head is very small, with a pointed snout. The colour is yellowish-white when young, changing with age to yellowish-brown; and from its similarity of hue to the carp it is commonly known as the carp-bream. It is also called the golden-bream, in contradistinction to the silver-bream or bream-flat (*Abramis blicca*), which is of a bluish-white, and has a silvery glitter when in the water. The carp-bream grows to a much larger size than the bream-flat, fish of four or five pounds not being unfrequently captured, while occasionally one is taken of three times the latter weight. The silver-bream is also much inferior as a fish for the table, being very bony and insipid; and although the carp-bream is better, it is not held in very much esteem, but it has some admirers when stuffed and roasted like the pike.

The Chub (*Leuciscus cephalus*), or, as it is called in the north of England, the *chevin* or *skelly*, is a powerful but timid fish, and apt to retreat to the deepest holes in the river at any unusual disturbance. In weight it seldom exceeds four pounds, though occasionally fish of six or seven pounds have been taken in the Thames. It is a rather short and thick "chubby" fish, with large scales, bluish-black on the upper parts, bluish-white on the sides, and silvery-white on the belly; the cheeks are golden yellow; pectoral fins, reddish-brown; ventral and anal fins, reddish-white; tail forked, and of a dusky brown. The chub spawns in April and May, but soon recovers, and is in season again in June or the beginning of July, but is in best condition for bottom-fishing about October. It lives chiefly on worms, but will rise well at the fly, and is also fond of cockchafers, grasshoppers, &c.

The Roach, or Blaise (*Leuciscus rutilus*) inhabits the same kind of rivers as the chub, and is a gregarious fish. It has a small, round, leathery mouth, and is provided with a circle of teeth placed in the throat. The roach is as deep but not so thick as the chub; it does not often exceed a pound in weight, but reaches four or five pounds at rare intervals. The scales are large, of a dusky green hue, with blue reflections on the upper parts, becoming lighter on the sides, and passing into silvery-white on the belly; the lower fins are red; the tail brown tinged with red, and deeply forked. It feeds on worms and vegetable food, but will occasionally take a fly. It spawns in May or June, and attains its finest condition after the first frosts in autumn.

The Rudd, or Red-Eye (*Leuciscus erythropthalmus*), is a much more widely distributed fish than has been supposed; for, instead of being rare and found only in the south of England, as asserted, it exists in many parts of England, Scotland, and Ireland, and in some localities in great abundance. It is frequently confounded with the roach, but is shorter and thicker, and of a ruddy, or golden coppery tint, varying from brown on the back to light golden yellow on the belly; the fins are bright red, with the exception of the back fin, which is reddish-brown, as also is the deeply forked tail; the irides also are red, whence its name of "red-eye." It is better eating than the roach, but seldom exceeds a pound and a half in weight. It feeds on worms, insects, and vegetable matter, and spawns about the end of April.

The Dace, or Dare (*Leuciscus vulgaris*), is also a gregarious fish. The head is small; body slender; tail forked; colour dusky on the back, varied with patches of pale olive-green; sides and belly, silvery; fins reddish, but not so much so as the roach. It commonly reaches nine or ten inches in length, and half a pound in weight, but very rarely grows to a pound. It is fond of the deep and

clear water of quiet streams, and of the open channels between thick weeds, and at times will be found upon the shallows. It is found generally throughout England, and although not much esteemed for the table, is a better flavoured fish than the roach. It spawns about the beginning of June, but quickly recovers its condition, and is in fair order by the middle of July.

The Graining (*Leuciscus Lancastrensis*) is scarcely found anywhere but in the Mersey and its tributaries. It differs little from the common dace, except that it has larger scales.

The Azurine (*Leuciscus cæruleus*) is another fish only found in Lancashire; it resembles the roach in shape, but is of a dull blue colour, and is called the blue-roach in the county where it is found.

The Bleak, or Blick (*Leuciscus alburnus*).—This lively little fish is constantly seen in large shoals near the surface of every still-flowing river. It is seldom more than four or five inches long. Head, small and neat; eyes prominent, with a patch of blood colour below; back, olive-green; sides and belly, silvery; scales, large; fins, colourless, and very transparent; tail, forked. It spawns about April or May.

The Minnow (*Leuciscus phoxinus*).—This fish, likewise called the *pink* and *mennow*, is to be met with in most of our clear brooks, which it prefers to larger and stiller rivers. It is gregarious, and is in the habit of retreating to the mud and weeds in the winter months. The colour varies much in different localities, from blue to green on the back and from white to red on the belly. Sometimes it is of a pearly white, which is a colour much prized when the fish is wanted as a bait, and sometimes of a yellow cast. It is chiefly sought after for the purpose of using it as a lure for the trout, salmon, and pike.

The Gudgeon (*Gobio fluviatilis*), though small, is highly prized from its good flavour, and affording sport to the young angler. It is gregarious, and is taken in immense numbers in the neighbourhood of London. Gudgeon rarely come to the surface, but frequent the bottoms of rapid rivers and brooks, preferring moderately shallow water with a gravelly bottom. This fish has a small beard on the upper lip. It is about five or six inches in length, with a round body and a thick head. Colour, olive-brown on the back spotted with black, and white on the belly; fins slightly tinged with brown, and the dorsal fin and tail spotted with dark brown. The gudgeon spawns early in May, and is in fair condition again in the course of a month or six weeks.

The Loach, or Groundling (*Cobitis barbatula*), is unlike the last-described fish in being nearly of the same size throughout its length. It has a compressed head, furnished with a well-marked beard composed of six tufts. It is about three or four inches in length, of a dusky brown colour. It also is only used as a bait; but for this purpose it is not equal to the minnow, bleak, or gudgeon.

The Perch (*Perca fluviatilis*) is a very handsome fish, of medium size. Body deep, with a high-arched back; head small, with sharp teeth in the jaws and the roof of the mouth. The edges of the gill-covers are serrated, with a spine on the lower part. Colours as follows:—Back, deep olive-green, with broad black bars, gradually becoming white towards the belly; ventral and anal fins of a rich scarlet, as is also the tail, though not so distinctly of that colour. The first dorsal fin is furnished with spinous prolongations, so sharp that it can scarcely be handled with impunity by the angler. It feeds upon worms, insects, and small fish. In stagnant ponds it will live, but does not thrive. The perch spawns about the end of April. It is a slow-growing fish, requiring many years to arrive at its full size. Three pounds is a large weight for it to attain, but a few instances are on record of its reaching seven, eight, and even nine pounds. It is very tenacious of life, existing a long time out of water, especially if it is occasionally wetted.

The Ruffe, or Pope (*Perca cernua*) very much resembles the perch in form and habits, but differs in colour, being light olive-brown on the upper part, yellowish-brown on the sides, and white on the belly, and it is spotted over the back, back fins, and tail, with small dark-brown spots. Instead of there being two back fins, as in the perch, they are conjoined, and form but one, extending nearly the whole length of the back. The ruffe is

common to most of the canals and rivers of England, and especially to the Thames and the Cam.

THE STICKLEBACK (*Gasterosteus aculeatus*, *G. spinulosus*, and *G. pungitius*).—These, and two or three other less-known species of the smallest fish found in great Britain, differ from one another chiefly in size, and in the number of the spines which are attached to the scales on the sides and along the back. The largest of them, which heads the above list, is two inches and a half long, whilst the smallest is not much more than an inch and a half. They are great devourers of young fry. Without their spines they form good bait for trout and pike.

THE BULLHEAD, OR MILLER'S THUMB (*Cottus gobio*), is known by the enormous size of its head, which is out of all proportion to its body. It is a small fish, and conceals itself under stones, waiting there for its prey, and at the same time saving itself from the attacks of larger fish.

THE FLOUNDER (*Platessa flesus*) is met with in the Thames in great numbers, and affords pretty good sport to the angler in that river, as well as most others near their mouths. It is a flat-fish of moderate size, seldom reaching to more than two pounds in weight. The upper part is of a dirty brown, with a few dusky yellow spots; belly, white. It has a row of sharp small spines surrounding the body, and between it and the fins, by which it may be distinguished from other kinds of flat-fish.

THE SHARP-NOSED EEL (*Anguilla acutirostris*), the BROAD-NOSED EEL (*A. latirostris*), and the SNIG (*A. mediorostris*), are the three varieties of the common eel known in Great Britain. They vary, not only, as their distinctive names imply, in the shape of their noses, but also in size and flavour. The snigs are the best-flavoured, but never grow large, seldom exceeding half a pound; the broad-nosed eel reaches five pounds in weight, but is inferior to both the others for table purposes; the sharp-nosed eel occasionally grows to an enormous size, and the captures of fish of thirty and forty pounds have been recorded. The colour of eels varies according to their haunts. The prevailing hue is dark olive-green on the back, becoming lighter on the sides and white on the belly; when taken from clear streams the colours are bright, and the fish is called the silver eel, but in muddy waters they become brown and dusky. The eel spawns in the sea, or rather in the brackish waters in the estuaries of rivers; and in order to do this will overcome numerous obstacles, for it can leave the water, and, by its serpent-like form, travel over or round any flood-gate or mill-dam in its course, and it has been known to go long distances overland. Its migration downwards takes place in the months of August, September, and October, during which time eels are captured in large numbers by the millers throughout the kingdom, who set their nets at the chief water-courses. Eels were generally considered to be viviparous, but it is now ascertained that they produce their young as fish do generally. But although the eel descends in the autumn, it does not deposit its ova until early in the spring, when it soon hatches. About April the tiny eels, little more than an inch in length, ascend the rivers in surprising numbers, surmounting the flood-gates, &c., which impede the progress of other fish; sometimes the millers put straw-ropes, up which the young eels swarm in myriads. While ascending the larger rivers they may be seen in a double column, one close to each bank, swimming with great power and speed. Occasionally, however, they do not ascend till later in the summer, when they are several inches in length. There are many localities, as ponds, &c., which have no communication with the sea; and here the eels, being unable to reach the warm, brackish waters, bury themselves in the mud, and spawn later in the spring in fresh water. The eel is a very voracious fish, and will feed upon all kinds of garbage, and upon small fish, frogs, rats, &c.; it may be said to be the great scavenger of our rivers. Eels feed chiefly by night, and they lie by day in the deep pools of rivers, under stones or stumps of trees, or among weeds, &c.

THE LAMPREY (*Petromyzon marinus*) and the LAMPERNS (*Lampetra fluviatilis* and *L. planeri*), are entirely unfitted for giving sport of any kind, and are taken with traps for the purposes of the table only. The lamprey, which grows to from twenty to twenty-eight

inches in length, ascends from the sea about April or May, for the purpose of spawning, and remains three or four months in fresh water. The lamperns are much smaller fish, and do not go to the sea. The first-mentioned, which is the longer of the two, attains to about twelve or fourteen inches, and is small in proportion; the second only grows to about ten inches in length, when it is as thick as the other species that is several inches longer.

CHAPTER II.

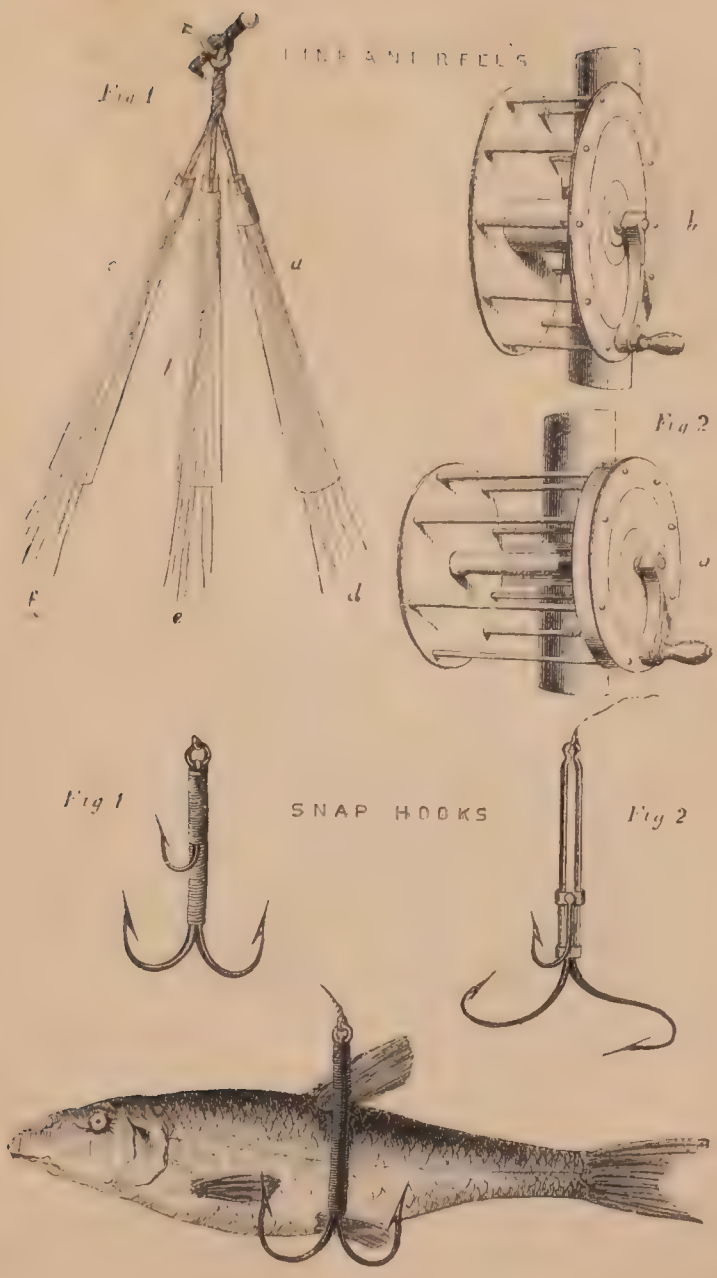
APPARATUS USED IN FISHING.

Sect. 1.—The Line, Reel, and Hook.

This, which is the essential part of all fishing tackle, consists of a reel-line varying in length, strength, and size, according to the nature of the fish which is sought after; of a reel to wind this upon, also varying in accordance with the line; and of a smaller and finer foot-length attached to the line, which is usually composed of silkworm gut, hair, or gimp, and is armed with one or more hooks, variously baited.

Reel-lines are made of horse-hair (from the tail), of silk, or silk and hair mixed, of spun cotton, and of silkworm gut. It is usual for the amateur fisherman to purchase his lines, and they can be obtained so cheaply nowadays, especially the cotton ones, that it is not worth his while doing otherwise when a tackle-dealer is within reach; but sometimes the angler prefers horse-hair lines, and likes to make them himself, and if at all handy, he may do this with advantage by the following mode, which is much superior to the machine-made lines, because the introduction of fresh hair is effected by the hand with much greater facility.

In Making the horse-hair line, first procure a quantity of good hair—if it can be obtained from a *young* male chesnut horse with a flaxen tail so much the better. When such a horse is docked, a considerable portion of his tail with the hair attached is removed, and that is the very best for the present purpose. A grey horse with a silver mane will give white hair, which requires staining, but the colour of the flaxen mane is as good as any art can give. Young hair is twice as strong as the milk-white hair which is peculiar to old horses; and the hair of the horse is much less brittle than that of the mare. Next procure three pieces of strong goose-quill, each about half an inch long, and fit loosely into them three pieces of deal three or four inches long; then divide the hair intended for your line into three equal portions; thus, if your line is to be of eighteen hairs altogether, then let each of your quills receive six, leaving about four inches projecting; then push in the sticks gently, and tie the loose ends together, as shown in the annexed woodcut (*fig.* 1). The knot formed by the union of the three divisions is to be attached to some fixed object by a pin; then take out each stick, one after the other, and pass the quill up to within an inch of the knot, replace the stick, and take two of them in the left hand. The remaining stick is to be gently twisted from right to left, and when sufficiently so, passed over the other two also from right to left, when it should be grasped by the left hand, gently keeping up a slight strain upon the knot. At this time the three are in the position shown in the woodcut; then let the angler take hold of *a d*, draw it towards him about a quarter of an inch, allowing the hair to slip through the space between quill and wood; twist it as before, and pass it over to the left. Repeat this with *b e*, and then with *c f*, when *a d* will again occupy the same position as at first. By carrying on this process a line may soon be turned out of great strength, and of any degree of tightness of twist; but if too tight, it will be liable to be entangled, or to *kink*, as it is generally called. As soon as the angler has mastered this part of the process, and has twisted a few inches of line, he must divide the remaining length of his hair into the same number of portions as he has hairs in his line, and cut off one hair at each of these



FISHING APPARATUS.

lengths, so that he may splice his line regularly throughout its whole length. As soon as one of these cut ends appears loose above the head of the quill, the stick must be removed, and another hair of full length inserted and twisted in with the rest, and so on with every succeeding break. In this way the line appears, when finished, to be furnished with a series of projecting hairs, but these may be removed without danger with a knife, or scissors, or a taper, previously soaking the whole line for twenty-four hours in water. The line may also be gradually reduced in size at the pleasure of the maker, by omitting to insert fresh hairs. By this mode all links and joints are avoided, and the line is everywhere within one hair of the full strength with which it would be furnished if joined in links in the ordinary way.

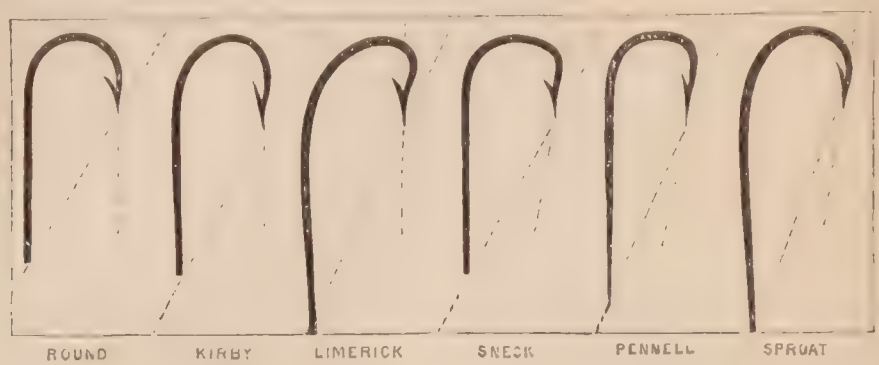
Silk and Hair Mixed Lines have been very much used of late years, on account of their winding better than horse-hair; but in this respect they are surpassed, as well as in strength, by the Plaited Silk Lines, which are now very generally adopted. Cotton Lines have been introduced by the Cotton Twine Company, of Corporation Street, Manchester, and as they have the advantage of being as strong and as durable as the silk, and are much less expensive, they have come largely into use within the last few years.

The Reel is generally used by the angler, partly for the convenience of carrying the line safely, but chiefly in order to allow of rapid extension or drawing-in of the line which is wound upon it. Multiplying-reels, in which, by the introduction of machinery, the barrel is made to travel several times to the single revolution of the handle, were formerly much used, but they are now in great measure replaced by the more simple plan of having a large barrel or drum on which to wind the line, instead of a small central spindle. The difference will be seen by reference to the previous woodcut, in which a view of both reels is given (*fig.* 2); *a* being the multiplying reel, and *b* the simple one with a large spindle. By the use of this large drum even a salmon line may be taken in as rapidly as can be desired, and the line lies much more evenly and free from any kind of hitch, with the great advantage that it will give off the line readily to the end. Some reels are made with a handle attached to the side-plate, instead of being on a separate crank, and they certainly are advantageous in being less likely to catch the line. The check-winch is a vast improvement on the plain reel, as it requires no manipulation, keeps the line fairly tight on the fish, and prevents its either overrunning or sticking fast. The Nottingham reels are large wooden ones that run wonderfully free, but a good deal of practice is required to use them, as they are very apt to overrun. Combination reels of wood and metal are now made, and are much lighter than brass reels; very light ones are also made of aluminium, but their cost will prevent their being much used.

The Foot-Length, or the extreme portion of the line, is composed of finer materials than the reel-line, in order to escape the eye of the fish. It is generally made of pieces of gut, knotted together, and altogether comprising a length of from three to eight feet. Sometimes it is of single gut throughout, but generally of two or three thicknesses of twisted-gut at the end next the line, then of two, and finally of one piece of gut. This material is the produce of the silkworm, and is the unspun substance intended for silk, but made into gut instead by the art of man. The silkworm, just before spinning, is immersed in strong vinegar for about twelve hours, and then broken in two by the hands of the gut-maker, who, by drawing the pieces apart, obtains gut of any fineness, according to the length to which he pulls it. Considerable knack is required to make it uniformly round and free from weak places, which should be searched for carefully in selecting gut for the single lengths. Horse-hair is sometimes used for this purpose, and in some instances gimp, consisting of silk protected by wire. All these various sorts will be treated of under the respective kinds of fishing in which they are employed.

Hooks are pieces of bent steel-wire, barbed at the point, and of various sizes and forms. They are made according to the respective patterns which are fancied by the English, Scotch, and Irish makers. The round-bent hook was formerly most used in England, and the Limerick pattern throughout

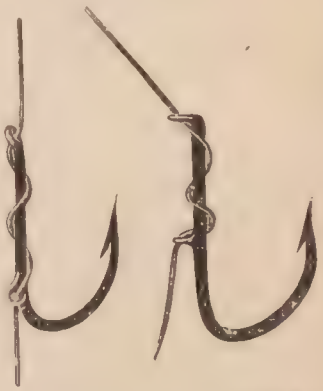
Ireland, while some Scotch anglers adopted the former, some the latter, and others the sneck-bent, which is squarer in shape than either of the above. Nowadays, however, there is a disposition to select the hook according to the purpose for which it is required, instead of pinning one's faith upon a particular pattern under all circumstances. For salmon-fishing none have hitherto surpassed the Limerick patterns made by Phillips of



Dublin; and for large trout these are also used, but for small trout flies the sneck-bend is frequently preferred; and the sproat-bend, which is intermediate between the round-bend and the Limerick, has also come a good deal into use of late for trout; for worm hooks the round-bend is generally adopted, and the regularity of its curve renders it also more handy for baiting when used as the tail-hook in spinning-tackle, and it is accordingly so used even when the rest of the spinning-tackle consists of sneck-bend hooks. Mr. Cholmondeley Pennell, in his "Modern Practical Angler," enters into an elaborate argument on the theory of hooks, and the objects to be aimed at in shaping them. He contends that the closer the line of the hook's point is to coincidence with a line drawn from the point of the hook to the extremity of the shank, the greater will be the penetration. This condition is most nearly fulfilled in the sneck-bend and the sproat-bend; but he contends that the former is rendered defective by the turning out of the point sideways, and is weak in the curve at the top of the shank, while the latter is wanting in depth and power in the point, and is faulty also in the form of the barb and the shank. He therefore proposes a medium form of hook, which is shown with the other forms of bend in the diagram given above. These hooks are made by Messrs. Hutchinson and Son, of Kendal.

Double hooks and triangles formed on a single shank, or brazed together, are now to be had, and they are far superior to whipped single hooks, which are very liable to slip or give way at a critical moment. Reverse double hooks —shaped like a letter S, with a small hook at the top and a large one at the bottom—are also a great improvement on two hooks of different sizes whipped on as the tail-hooks of a spinning flight. Lip-hooks are now likewise made with the loops formed on the shank, thus

METAL LIP-HOOKS



NEW PATTERN • OLD PATTERN

obviating the whipping on of a piece of gimp or wire so as to make a couple of small loops for the line to pass through. Hitherto, however, there has been a tendency of the lip-hook to slip, and the position of the loops has prevented the line pulling straight. In order to overcome these difficulties, Mr. Pennell has suggested the change in form shown in the above illustration, from which it will be seen that the position

of the loops is shifted, so as to allow the line to pull straighter, and the shank of the hook being left in a rough state, the gimp has not the same tendency to slip as it has when in contact with a polished steel surface.

Various articles are required for uniting these portions of the line—viz., silk of different degrees of strength, cobbler's wax, spirit varnish, small scissors, &c.

THE JOINTS used are—first, *whipping;* second, *knotting*. Whipping consists in drawing successive circles of silk, well waxed, tightly around the two objects laid in apposition; as, for instance, two portions of the line, or the line and hook. This is finished off by slipping the end of the silk through the last circle and drawing tight, and, if necessary, repeating the operation again and again; this is called the half-hitch. Knotting is effected by several modes, the most common of which is the water-knot, or single fisherman's knot, which is managed as follows:—Lay the two pieces of gut or hair together,

SINGLE FISHERMAN'S KNOT

one overlapping the other three inches or more; then hold one end in the left hand and form a simple slip-knot upon it, turn the other end to the right and do the same thing, then draw each half-knot very tight, pull the two together, and the knot is complete. The advantage of this knot is that it will never give way to a direct pull, and yet may always be undone without difficulty. For trout-fishing and general purposes it is unnecessary to do anything further, but for salmon and pike fishing, where any access of strength is an advantage, it is usual to whip the ends with fine waxed silk. As however the whole stress is still on the point of junction of the two half-knots, there is little gained by this whipping, as usually carried out; but by leaving

NEW KNOT.

ORDINARY KNOT.

the two half-knots a little way apart, and whipping between them, as shown in the first of the above figures, there is a decided gain in strength, as well as in neatness, over the ordinary knot, which is shown in the second.

THE ACCESSORIES to the line are the float and the shot or leads. These are used in bottom-fishing only, and are intended to keep the hook at a certain distance from the bottom. The float is either of quill or cork, and is fixed upon the line by a ring at one end and a sliding-quill at the other. The shot are partially split and then brought together again upon the line. In this way, by plumbing the depth of the water, and adjusting the float so as to keep the bait at a certain depth, the object of the bottom-fisher is attained.

BOX-SWIVELS AND HOOK-SWIVELS may be readily understood from their name, and are used in spinning-tackle, in order to prevent the line from twisting. The double box-swivel is represented in the accompanying figure, and one of

the most simple forms of the hook-swivel (which is very handy from the facility of attaching or detaching the loop of a line or trace) will be found in the illustration of the lead given subsequently in page 328.

GIMP is composed of silk or other material strong enough to resist any straining force applied to it, and protected from the teeth of the fish, or from sharp stones, by fine brass wire neatly wound round. It is made of various sizes and strength.

SECT. 2.—THE ROD.

THE ROD is the machine with which the line is conveyed to the place where the fish is the most likely to take it, and with which the various manœuvres prior to his capture are effected. It is made of several pieces united by joints, and these are of varying size, length, and materials, according to the kind of fishing to which it is to be applied. It is also sold to suit all purposes in one by changing the top joints, and it is then called a general rod; but though this may suit the pedestrian tourist who wishes to avoid carrying more than one rod, yet it interferes a good deal with the efficiency of both, and especially does it fail as a fly-rod. It is, however, well enough suited to the beginner. The extra pieces are contained in the butt, which is hollowed out to receive them. The specific varieties of rods will come under con-

sideration in each chapter devoted to the particular sport for which they are intended, but I may enumerate them here as the general rod, the trolling rod, the trout fly-fishing rod, and the salmon fly-fishing rod. The materials of which these are composed are ash, hickory, greenheart, and cane, which are united by brass ferrules, or spliced together. Whale-bone is also sometimes used in the top joints of fly-rods; but these are made so much better by the tackle-maker than by the amateur, that it is useless to go into the description of their manufacture. There are plenty of first-class makers who will serve the young angler with rods in every variety, and of the very best quality; and if he finds that he cannot afford their prices, he can procure at the cheaper shops rods of various kinds which will answer his purpose much better than any of home manufacture.

Sect. 3.—Natural and Ground Baits.

The Earth-Worm is the most primitive and simple of all baits, and is that which is generally first used by the juvenile angler, because it is easily obtained, and applied without difficulty. There are several varieties of these worms, known to anglers as the *dew-worm* or *lob-worm*, the *marsh-worm*, the *tagtail*, the *brandling*, and the *red-worm*.

The Dew-Worm, or large garden-worm, is of considerable size, varying from six to twelve inches in length when extended. The tail tapers somewhat, but in the squirrel-tailed variety it is flattened. In colour this worm is of a dull brick-red, approaching to a crimson towards the head. These worms are obtained either by digging, or by searching for them quietly at night with a candle and lantern on the lawns or paths of the garden. In dry weather they are always out when the dew is falling.

The Marsh-Worm, or Blue-Head, is found in moist and undrained localities, where it may be obtained with a candle and lantern in large numbers during the fine summer nights. In colour it is of a light dirty or brownish purple. These worms should be kept in damp moss with a little earth mixed with it. A variety of this worm found in land only partially marshy is called in Scotland the Black-Head or Button-Worm, and is more tough, and therefore better calculated for standing the rough treatment which it must undergo in swift and wide streams. It is an excellent bait for trout.

The Tagtail is common in good strong clays which are well manured for turnips, mangold-wurzel, &c. It is a small worm, of about two or three inches in length. Head larger, and of a deeper blue than the body, which is a dingy-red; tail, yellowish.

The Brandling is a small worm found in artificial composts, and in rotten tan, or other decaying vegetable matter. It is of a dirty-red colour, approaching to brown.

The Red-Worm is about the same size as the brandling, which it resembles in all respects but colour, that being in the red-worm exactly what its name implies. It is found in the banks of ditches and sewers. The *gilt-tail* is a variety of this worm, but larger, and of a paler colour towards the tail.

All these Worms should be Scoured, a process which consists in starving them, by placing them in damp moss, neither too wet nor too dry. The worms here are not only deprived of their usual food, but in their efforts to escape they mechanically press their bodies between the fibres of the moss, and in that way completely empty themselves of their fæcal contents. Before putting them in the moss, Mr. Stoddart recommends that worms should be placed in water for a few minutes, after which they should be suffered to crawl over a dry board, in order still further to cleanse their skins. They may then be transferred to the moss, as described above. The worms should be examined from day to day, and those which are unhealthy or injured should be removed. When the worms are quite sufficiently scoured, they should be stored for use. Three or four days is the average time required for scouring.

Worms are Preserved in the following manner:—Procure some fresh mutton suet, cut it fine, and boil it in a quart of water till dissolved; then dip in this two or three pieces of coarse new wrapper large enough to supply each variety of worm, which should not be mixed together. When these are cold, put them into separate earthen jars, with some damp earth and the worms which are to be kept, and tie

over all a piece of open and coarse muslin.

SHRIMPS are used for angling in docks and canals, and are good baits for perch, if used alive.

THE COCKCHAFER is a common bait, but is not of much value in angling, except for chub.

DUNG-BEETLES, of various kinds, are also employed, and some anglers use them after removing their wing-cases. They should be placed crosswise on the hook.

GRASSHOPPERS form good baits for some fish, and are much used for chub in particular. They are met with after the beginning of June till the end of September. The greener and larger they are, the better the fish take them.

BUTTERFLIES AND MOTHS are also sometimes efficient baits, but their artificial representations are more commonly used.

THE EPHEMERA, OR NATURAL MAY-FLY, is used as a bait during the period when it comes forth in countless myriads. By baiting with this fly in May and June success is often attained, putting two flies on the hook at the same time.

CADDIS-FLIES are also used in the same way as the ephemera.

HUMBLE-BEES, BLUE-BOTTLE FLIES, GNATS, and ANT-FLIES are held in estimation by many anglers, as well as the HARRY-LONG-LEGS, and the COMMON HOUSE-FLY.

MANY LARVÆ or GRUBS are used in bottom-fishing, and are of great service in that department. Of these the principal are—1st, *flesh maggots*; 2nd, *beetle larvæ*; 3rd, *caddies*; and 4th, *caterpillars*.

FLESH MAGGOTS, OR GENTLES, are obtained and scoured in the following manner: Procure any kind of flesh, or the body of any small animal. If there is any difficulty about this, the liver of a horse or cow answers remarkably well. With a knife cut some deep gashes in the substance of the liver or flesh, and hang it up in a shady place, but near the haunts of the blow-fly. In a few days the maggots will attain a lively state of existence; but they require about a week to reach their full development to the green or soft state, and another week to reach their maturity, when they are large and fat, with black heads. The various stages are adapted for different fish. Blow-flies are abroad from May to the end of November, or even to the middle of December in mild seasons. The SCOURING of these gentles is effected by placing them for a few days in a mixture of bran and fine sand, slightly damp. By this process they are emptied of their contents, and rendered tough in their skins. When the object is to preserve them in this state for many days, they must be kept in a very cool place, such as a cellar, or they even should be buried in the earth. Without attention to this precaution they are almost sure to assume the chrysalis condition, in which stage they are useless as baits. A low temperature and exclusion from air and light retard this development; and by burying the carcase of a small animal (after the larvæ are a day old) in a cool place, and confined in a box containing a mixture of dry cow-dung and fine earth, the gentles may be preserved in their larval state during the whole winter. The place selected should be protected from severe frosts, which would kill the gentles, and therefore an outhouse is well suited for this purpose, or any space in the garden well sheltered by a thick shrub, such as the laurustinus.

THE LARVÆ of the various beetles are called by anglers the *white-worm grub*, the *cow-dung grub*, the *cabbage grub*, and the *meal-worm*. The first is the larva of the cockchafer, and is found in loose loamy soils, especially near the horse-chestnut. It may be easily found by following the plough. The second, as its name implies, is found in cow-dung, and includes larvæ of several of the beetle tribe. The third is found in the stalks of old cabbages, and often about their roots, and includes larvæ of two or three species of beetles. The last is found in the meal-tub, is much smaller than the three first-mentioned varieties of grubs, and is not so good for angling purposes as the gentle.

THESE GRUBS MAY ALL BE PRESERVED by simply placing them, with some of the earth in which they are found, in any receptacle, keeping them afterwards in a cool situation.

CADDIES are the larvæ of the *Phryganea*, or caddis-flies, of which there are many species, known to anglers as caperers, cinnamons, &c. They are easily found beneath the stones, weed, &c., of shallow brooks, and may be

stored by putting them in water, with some sand, in a cool place. By placing them in a perforated box, they may be suffered to remain in a running stream, where they continue to grow and thrive as well as in their native haunts. Trout, roach, and dace are very fond of them.

Caterpillars, or the larvæ of butterflies, are either smooth or rough. The former are not much used, and the latter are so thoroughly imitated by the artificial fly called "the palmer" that they are scarcely ever employed. There is no doubt that in angling natural products are better than artificial, if they are equally capable of enduring the rough usage required to drag them through the water. In this respect it is that the artificial palmer beats the hairy caterpillar, its original; and hence the latter is almost wholly driven out of the angler's list of baits.

Bread Paste is made from new bread, well kneaded, and with or without the addition of honey. It is either used in the white state, or it is coloured with vermilion, lake, or turmeric. Sometimes stale bread is used, but it requires more kneading, and the addition of gum-water, or soaked greaves, or some more adhesive material. Cheese is likewise made the foundation of paste, either by itself or mixed with bread; by constant kneading it becomes perfectly tough, and withstands the action of the water for a long time. A peculiar kind of paste, called *patent paste*, is made by washing away all but the pure gluten. A paste of flour is first to be made in the usual way, then, by successive washings in cold water, by degrees the process is completed, care being taken not to dissolve the gluten itself by mixing it up with the water; and to avoid this, after each successive washing, let the paste drain for a few minutes. This paste will keep for any length of time, if protected from the action of the air by wrapping it in sheet-lead.

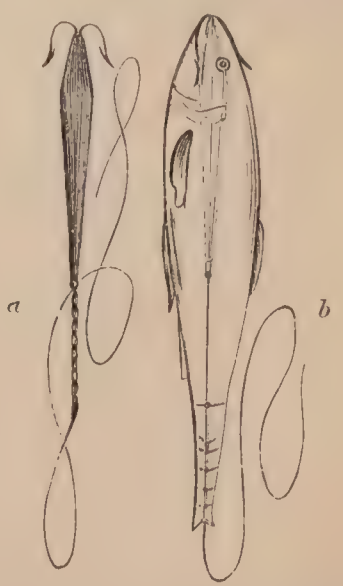
Shrimp Paste is made by removing the shells from the shrimps after they have been boiled about twenty minutes, and bruising the flesh in a mortar until it becomes a uniform mass; then add, in proportion to a pound of shrimps, an ounce of common salt and a quarter of an ounce of saltpetre; beat up well together, and keep in a jar tied down with bladder. Formerly salmon-roe was much used in the same way, but it is now illegal to use it.

Ground-Bait.—The object of this very general accessory to the angler's art is to collect an unusual number of fish to a given spot, and at the same time to do this by offering them a quantity of bait of the same kind as that which is afterwards to be used on the hook, but of an inferior quality to it. Thus, if intending to fish with earth-worms, bait with unscoured worms, and fish with them well scoured. Worms in clay-balls are a good ground-bait, because they are not all at once presented to the fish, but appear gradually as the clay dissolves. Mr. Salter recommends the crumb of a quartern-loaf to be cut in slices two inches thick, and soaked in water till thoroughly saturated, then squeeze it tolerably dry, and add bran and pollard, kneading all together till a firm mass is the result as tough as clay. *Scalded greaves* (or *scratchings* as they are called in some localities) mixed with tenacious clay, are a very useful ground-bait; and may be made into large masses and thrown into the water in lumps of two or three pounds weight. *Gentles* mixed with sand are also used, but they should be unscoured, and coarse old carrion gentles for this purpose are the best, as the fish will be attracted by them, but will take the scoured gentle on the hook in preference.

Dead Fish as Baits are usually so arranged on the hooks as to spin or rotate on their axes rapidly, by the action of the current, or by drawing them through the water. This is an unnatural motion, and unlike any movement of any known inhabitant of the river; nevertheless it takes well with many fish; and, judging by this unerring criterion, it may safely be approved of and adopted. Minnows, gudgeon, dace, bleak, sticklebacks, and other small fish, are thus used, and occasionally sprats and other sea-fish. There are various modes of baiting, and almost every fisherman has his particular whims and oddities, here as well as in other matters connected with fishing. Some use one hook, some two, some three, and others four, or even more (as will be seen by the description of spinning-flights under the heads of Trout-fishing and Pike-fishing). Some—as, for instance, Mr. Stoddart—bait tail foremost, after removing the

head; others always take care to present the head to the trout or pike. The great thing to be attended to is to make the bait spin well, which can only be done by producing a slight curve in its body, and by making the line draw it on one side more than the other. In this way, with one or two swivels, which prevent the line throwing any impediment in the way, the baits rotate rapidly if well applied, and the fish is deceived to his ruin. When two hooks only are used, the extreme one is larger than the other (usually Nos. 3 and 5), and they are whipped on the same piece of gut or gimp, at an interval of about half an inch clear between them. The larger hook is passed through the mouth of the minnow and out at the root of the tail, so as to leave the barb of the hook free. When this has been done nicely the bait assumes a bent form, corresponding with that of the hook, and the mouth of the minnow being closed (either by a leaden cap which slips down over the line, or by the second hook being passed through both lips, thus holding them shut, or by a few stitches with a fine needle and thread), the bait will spin or rotate when drawn rapidly through the water. Colonel Hawker recommends a hook or two to be allowed to float loosely and openly by the side, on a stout piece of gut, but I cannot advise their adoption. The usual mode of employing the third hook is to whip it on to a piece of gut about an inch long, and then to include this gut in the whipping on the second or smaller hook, which it should also match in size. This third hook then lies closely adapted to the side of the bait, not floating loosely as advised by Colonel Hawker. The first two are applied exactly in the same way as when two hooks only are used, when the third will lie flat against the side of the bait, and retain its position there by the stiffness of the gut or gimp. This last form is used for the application of the celebrated parr-tail as a bait, which was formerly much used in Scotland. Now, however, that it is decided that the parr is a young salmon, its use as a bait is prohibited, as well as that of salmon-roe. Nevertheless, minnows, gudgeon, small dace, &c., may be used after the same fashion, and I therefore give the instructions of Mr. Stoddart, one of the highest authorities on the subject. He advises all the fins and tail to be cut off, and the head and shoulders to be then obliquely sliced off with a sharp knife. When this is done, the tail-end is to be used forward—that is, nearest the rod—and is then made to appear as the head of a fish. A good minnow of the proper size requires no paring, and fits the hooks exactly, so as to allow the one to project slightly through the tail, while the other closes the mouth. It answers admirably for large trout or pike. Some other modes are described as useful variations in adapting dead-fish baits, but I believe the double or treble-hook, as above, will suit most purposes where the bait is required to spin rapidly, whether it be the entire fish or part, as already mentioned. All these various hooks require swivel-traces, single or double, which will be found described under the head of Pike-fishing.

MINNOWS ARE ALSO MOUNTED ON GORGE-HOOKS: see figure annexed—*a* representing the hook itself, and *b* the fish and hook ready for use. Gorge-hooks are either single or double, the latter being here represented. In baiting this hook, after it has been whipped



to a piece of strong gut looped at the other end, take a baiting-needle (a description of which will be found in Sect. 5, in a subsequent page), and by its means draw the gut and hook through the mouth and body of the fish, bringing the needle out at the root of the tail, and leaving the hook buried in the body of the minnow, with the bend and barb of the hook on each side of its mouth.

After the needle has been brought out, re-enter it on the other side, so as to include a piece of the flesh of the tail in a loop of the gut. If this is neatly done, it will be found, after drawing the gut tight, that there is no disposition in the fish to slip off the hook, unless very flabby, in which case a single turn of light silk tied tightly round the root of the tail is sure to make all safe. Besides these modes some others are used to catch pike, but as they are peculiar to that department, they will be treated of under the head of Pike-fishing.

Dead Minnows may be Preserved for use, as well as other small fish, by keeping them in salt and water, or pyroligneous acid and water; but the latter I believe gives them a flavour which fish do not like. Sugar also will answer the purpose, or any kind of spirit—as whisky or gin; but by far the best material is oil, which will keep them sweet, and also stiff, for a great length of time, if they are just raised to the boiling temperature, by immersing the vessel containing the oil and fish in boiling water for a few minutes; more than this renders them tender and liable to break. It is better, however, where it can be conveniently done, to carry the baits alive, and kill them as wanted, by a blow on the head; or they may be kept fresh for a few hours by laying them in dry sand, or, on the other hand, wrapping them in a damp cloth, which should be moistened from time to time as necessary.

Live Baits form a very common lure for the larger kinds of fish, and are used by inserting the hook in some part of the body not vital. This is called roving, and is practised with any of the smaller fish, such as minnows, bleak, gudgeon, &c., in capturing trout, perch, and pike. The hook is entered in the back close to the fin, and the barb suffered to protrude above that appendage, and with the point of the hook directed towards the tail of the fish. The line is shotted so as to sink the fish to the required depth, and used with or without a float. Some other methods of fixing the hooks have been recommended, by which the hook is entered in one part, then made to traverse the fish under the skin, and finally brought out at the mouth; but they are so abominably cruel that I must decline having anything to do with their description. All field-sports have, it must be admitted, an undercurrent of cruelty: but where there is a choice, no man of any ordinary feeling will hesitate in selecting the least severe modes of taking game.

Frogs and Newts are used exactly in the same way as the minnow, by passing the hook through the skin of the back. They are shotted, to keep them down, but must be raised to the surface every four or five minutes, to allow them to respire.

Minnows are Procured for the purpose of using them as baits, either by angling for them, and carefully removing them from the hook, and then placing them at once in a vessel of water, or by taking them with a large hoop-net or fine casting-net. The last plan is that usually adopted, but it requires some little practice for its use, and nothing but an ocular demonstration will give any idea of the mode of employment. Any fisherman will, however, initiate the tyro for a trifling consideration. With the hoop-net they may be taken, by sinking it by means of weights to the bottom of the brook; and then, after enticing the minnows by means of small pieces of worms dropped over it, the string is suddenly raised, and the minnows are caught in its meshes.

Minnows may be Preserved Alive by placing them in a perforated tin or wooden case, and sinking them in any running stream, in which mode they retain their health and liveliness for an indefinite period, but they require to be fed occasionally on worms, gentles, &c. They may be kept alive for a long time in any clean vessel by changing their water frequently; but in this way they are not so healthy as in the above plan. When wanted for use, a small bait-kettle is used with a perforated lid, and capable of containing from one to two quarts of water. The best kettles have a double lid that tends to keep heat from the fish and water from splashing over on the person carrying it. The kettle should be kept under the shade of a tree or hedge, or set in the stream, while the fishing is going on, as the sun will soon make the water hot enough to kill the fish.

Sect. 4.—Artificial Baits and Flies.

Minnows are now manufactured so as closely to resemble the real fish in

appearance, but most of them fail in imitating the consistency and softness of the original, and consequently do not take nearly so well as their appearance would lead one to suspect. All will occasionally take good fish, but certainly not so well as the real minnow. In many localities, however, these are very scarce, and there the substitute is certainly useful. Among the best are the phantom minnow, made by Brown of Aberdeen, and the plano-convex minnow made by Hearder of Plymouth; but almost every tackle-maker will have an endless variety from which the angler can choose according to his fancy.

THE SPOON-BAIT, as its name implies, is in form like a spoon, with hooks attached, and is made in numerous sizes, shapes, and hues. It is one of the most effective of artificial baits for pike and trout, especially for lake trolling from a boat.

ARTIFICIAL FLIES are so numerous, and their importance is so great, that a large part of the angler's time is generally occupied in mastering a knowledge of their various forms, and the mode of tying them. All of them are composed of three essential parts: first, the hook; second, the gut or loop to attach the hook to the line; and third, the various articles tied on the hook for the purpose of imitating the natural fly. The angler will have no difficulty in procuring his hooks and gut, both of which, however, he ought to select with great care; but he will experience some little vexation and disappointment when he attempts to tie an artificial fly, especially without the practical instruction of some older craftsman. The late Mr. Blacker, a celebrated fly-tier, published a volume descriptive of the art; Mr. Ronalds brought out another, entitled "The Fly-fisher's Entomology;" and Mr. Francis Francis, in his "Book on Angling," has also gone into the subject most elaborately.

THE MATERIALS are first to be collected, and if they are not at once bought in the mass from the fishing-tackle maker, they require some little time to get them together. They should be kept in a case expressly for them; the best form for which is somewhat like that of the common travelling writing-case. In this the body of the case contains the solid articles, such as wax, hooks, scissors, &c., and the lid may be converted into a series of large pockets for feathers, silks, wools, &c.

FLY-MAKING MATERIALS.

1st—Hooks of all sizes.

2nd—Gut, plain and dyed, fine and stout.

3rd—Scissors, fine, curved, and common.

4th—Nippers and pliers.

5th—Silks of all kinds and colours.

6th—Wax, spirit varnish, and brush.

7th—Wing-picker or pointer.

8th—Pair of fine spring-forceps.

9th — Dubbings, viz.: pig's wool, mohair, coloured wools, hare's-ear fur, white seal's or white rabbit's fur, water-rat's fur, cow-hair, squirrel's fur, mole's fur, black spaniel's-ear fur, black bear's hair, &c.

10th—Tinsels, viz.: gold and silver, flat wire, twisted and fretted cords, &c.

11th—Feathers for trout-flies, viz.: wing-feathers of snipe, woodcock, partridge, landrail, thrush, lark, starling, blackbird, wren, waterhen, coot, and redwing. Body-feathers of grouse, pheasant, mallard, teal, and golden plover. Hackles of barn-door fowl in all colours. Neck-feathers of partridge, starling, lapwing, wren, to be used as hackles. Peacock-herls and ostrich-herls of all colours, dyed.

12th — Feathers for salmon-flies, including those of the turkey in all shades, golden pheasant neck and body-feathers, silver pheasant, common pheasant, and argus pheasant, peacock, and jungle-cock; blue feathers of the lowrie and mackaw, and of the jay's wing; green feathers of the mackaw. Besides the natural colours, there should be dyed cock's hackles of larger size than for trout, of the following shades, viz: purple, blue, crimson, scarlet, orange, yellow, green, and brown. Feathers of the kingfisher, swan's feathers for dyeing, guinea fowl, bittern, heron (pendent and breast feathers), ostrich, and raven. Few collections comprehend the whole of the above, but the angler may endeavour to obtain as many of them as possible; still he may rest satisfied even if he is not able to fill up every link in so extensive an assortment.

DYEING is required when the natural feathers, &c., are not sufficiently varied. It is an art exceedingly simple in principle, though not always so easy in practice, if the colours are required to

be very delicate or brilliant. All the light and transparent shades require for their perfect development either a white material, or one of a shade somewhat resembling the intended one. Thus the pale or bright yellows can only succeed with a white ground; reds will take on brown or yellow; greens on any light colour, but not well on deep brown or red; purple on light brown or red, &c. &c. The chief materials that require to be dyed for the purposes of the angler are silk, feathers, and wool or hair. The first is usually to be bought of the required colour and shade, and it may therefore be dismissed from consideration. The second and third require to be well scoured before they will take the dye, and for this purpose a solution of carbonate of potash (one drachm to a pint of water) is to be employed, or putrid urine, the material being well soaked and then washed in it, and finally thoroughly rinsed in clean water. All dyes, or nearly all, are effected upon the same principle—namely, to saturate the substance with the colouring matter while in a soluble state and dissolved in water, and then to add some substance that will convert the soluble dye into an insoluble one, by which process it is retained within the substance of the material and is rendered permanent, or incapable of being washed out. This latter substance is called a *mordant*. Thus in almost every case the art of dyeing requires the dye-stuff and the mordant to be separately applied; sometimes the mordant being first introduced, and then the dye-stuff, whilst at others the opposite mode is adopted. In some cases, however, the two are applied together, and in others no mordant whatever is required.

The Mordants used in dyeing are numerous; but for our purposes a few only need be employed. These are—first, alum and acetate of alumina; secondly, muriate of tin; thirdly, nutgalls; fourthly, acetate of iron. Alum is most generally used with the addition of a little cream of tartar, which is added in order to engage the excess of acid when decomposed by the oily matter contained in the material. Half an ounce of alum and half a drachm of cream of tartar are dissolved in half a pint of water in an earthen pipkin, and the materials are then boiled for two hours in the solution, which is called "a bath." They are then taken out, drained, and washed, and are ready for the dye. For dyeing feathers, purified alum should be used, as the common sort is impregnated with sulphate of iron. The other mordants are used in the same way, in quantities which will be specified when required.

The Dye-stuffs are either soluble or insoluble in water. When the former is the case, as it generally is, they are dissolved in it at a boiling temperature in an earthen pipkin. Into this the material, after receiving the mordant, as described in the preceding paragraph, is plunged, and allowed to remain for a specified time, varying according to circumstances. When the colouring matter is by nature insoluble in water, as in the case of indigo, its solution is effected by means of some other fluid, with which the article to be coloured is imbued, after which, by the addition of some third body, it is again rendered insoluble, and thus retained in the meshes of the material.

To Dye Black.—Make a mordant-bath of one drachm of acetate of iron dissolved in half a pint of water; boil the materials in this for two hours, then rinse, and boil gently for one or two hours, according to the shade required, in the following dye-bath:—Madder and logwood, of each two ounces; water half a pint.

Purple is dyed by using the above mordant-bath and half the quantity of dye-stuff. If a crimson-purple is required, the mordant must be composed of equal quantities of acetate of iron and acetate of alumina.

Crimson or Claret.—The mordant must be composed of one part of acetate of iron and three of acetate of alumina; then use the madder and logwood as before. If required to be very bright, use the alumina without the iron. Another mode consists in using the alum-bath as a mordant, and cochineal as the dye-stuff; but there is not so rich a result as with the first receipt.

Red.—Mordant of acetate of alumina alone. Dye-stuff, madder or cochineal.

Scarlet is dyed by making a mordant-bath of muriate of tin, two drachms to the half-pint, with the same quantity of cream of tartar. Then make a dye-bath of three or four drachms of cochineal, and boil till dissolved, after which the materials must be gently simmered in it for an

hour or two, and then dipped in the mordant-bath, examining carefully to see when the full colour desired is obtained.

ORANGE.—First use the mordant-bath of acetate of alumina, then boil in a dye-bath of madder, and afterwards one of quercitron. The exact shade must be obtained by repeated trials.

YELLOW.—Very strong mordant-bath of acetate of alumina, then dip in a dye-bath of quercitron or turmeric, varying the quantity according to the shade required.

A GOLDEN COLOUR is obtained by alternately using two baths, one of copperas and the other of lime-water (one drachm of the copperas to half a pint of water). By the absorption of oxygen the protoxide of iron soon passes into the golden-coloured deut-oxide.

A BUFF is obtained by a diluted bath of each of the last materials.

BLUE is produced by rendering indigo soluble, either by dissolving it in three times its weight of sulphuric acid (which, however, to a certain extent destroys the toughness of the feathers), or by adding to it equal quantities of potash and orpiment, which make it of a greenish-yellow for a time, from which it recovers its colour by exposure to the air; or by adding to the indigo a solution of copperas in lime-water. Both of these last processes, however, require some time and exposure to the air to produce the full blue colour. The proportions are one of indigo to two of the copperas and lime respectively.

GREEN is produced by dyeing first the yellow colour, and then dipping in the indigo till a proper shade is produced. It must always be remembered that the blue becomes more fully developed by time, and consequently the colour should be at first of a more yellow shade than is required.

The following shades are not so permanent as those already given, but they are sufficiently so to suit the purposes of the angler:—

A PALE GREEN, as required for the green drake, is obtained by using the muriate of tin mordant, and then immersing in a dye-bath composed of prussian-blue and tincture of turmeric, both being used very sparingly.

LAVENDER OR SLATE is obtained by bruised nut-gall and copperas, with more or less logwood, according to the shade required.

BROWNS may be procured either by boiling walnut-shells down to a strong solution, or, when required of a more chesnut hue, it may be made of that colour by boiling in a bath composed of a small handful each of sumach and alder-bark boiled in half a pint of water with half a drachm of copperas.

OLIVE is obtained by adding to the green, as above described, a portion of the walnut-dye, more or less according to the colour required. Brown-olive requires the foundation to be of the walnut decoction, and only a little green to be added, while green-olive must be first dyed in the usual way of a green colour, and then submitted to the walnut decoction.

Of late years, however, since the invention of aniline, the process of dyeing has been rendered much less troublesome, and the sixpenny bottles of Judson's Dyes answer well with many colours.

WAX is used either in the shape of the common "cobbler's-wax," or in a transparent form, composed of—white-wax half an ounce, Burgundy-pitch half a drachm, lard half a drachm; melt all together, then cool, and when nearly cold, work and draw it well out till it becomes white, opaque, and ductile.

SPIRIT-VARNISH is sold in all the shops of good quality; and also good TURPENTINE-VARNISH, which should be obtained of the best coachmaker's quality. It cannot be made in small quantities nearly so good as sold by the varnish-makers.

Such are all the materials which are necessary for artificial-fly making. We will now proceed to consider the best mode of tying them on the hook.

GENERAL PRINCIPLES OF FLY-MAKING.—In all cases the gut and hook should first be selected of such size and strength as will serve to hold the fish which they are intended to capture; then whip the hook on one end of this piece of gut, after flattening it with the teeth, using for the whipping a piece of strong silk well waxed with cobbler's-wax. Sometimes the continuation of this same silk is used for the purpose of tying on the feathers, wool, &c., but usually a finer kind is employed, and especially where great neatness is required, as in the smaller sized flies. Some fly-makers begin

their whipping at the bend, and others at the end of the shank, but this is very immaterial, and is almost always a matter of choice. The most simple fly is made up of a head, body, and legs; the next stage of complication gives a pair of simple wings, then a tail, and finally are superadded, in the salmon-fly, the compound bodies with separate joints and legs, and the wings and tails composed of various coloured feathers.

The Body is made of one or other of the following materials: first, coloured floss-silk wound round the shank regularly, and giving a uniform, smooth, and shining surface, as in the caperer; secondly, of wool, fur, or mohair called dubbings, attached to the tying-silk by the adhesive power of the wax with which it is covered, and forming with it a rough hairy line, which is then wound round the shank from the end to the bend, or *vice versâ* —this forms a rough hairy-looking body, as in the hare-lug and numerous other flies; thirdly, of peacock or ostrich herl, either of which is wound singly or in double layers round the shank, and forms the body of several of the most killing flies—as, for instance, the black-gnat and peacock-hackle; fourthly, of a foundation composed of either of the above materials ribbed with silk, or gold or silver twist, wound spirally round, or sometimes in a circular manner at intervals, in the body, or as a terminal joint at the lowest part.

The Legs or Feelers are generally made of feathers wound spirally round the shank of the hook, but sometimes dependence is placed on the dubbing, which, after it is wound round, is pulled out by means of the picker, and made to take the form of the legs, as in the hare-lug and brown-rail. This, however, answers badly, except in very small flies, as all the dubbings lie close in the water, and do not serve to conceal the bend and barb of the hook like the hackles or any other kind of feather. Generally speaking, the legs are imitated by some of the many coloured cock's hackles, which the fly-fisher ought to possess, either of the natural colours of the cock, or dyed in one of the receipts given above. These are first tied at the point to the shank, beginning always from the side next the bend and ending at the shoulder, and thus keeping the longest fibres of the hackle outwards. Sometimes the whole body is invested with two or more hackles, after first making it up full with dubbing of some kind. This is seen in the single and double palmers.

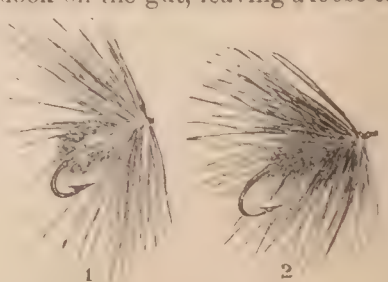
The Head is generally made by a few turns of silk, or by the black herl of the ostrich, or that of the peacock's feather.

The Tail, when used, is composed in the trout-fly of two or three fibres of some feather, as in the grey-drake; or of two fine hairs, as in the stone-fly. In the salmon-fly it is often much more complicated, and is then generally composed of a part of the crest-feather of the golden pheasant, with or without the addition of a tag of coloured silk or other gaudy material.

The Wings in the trout-fly are generally composed of two pieces of the web of some of the feathers enumerated in the list already given. They are sometimes tied on at the shoulder, in the direction which they finally assume, but the best plan, and that which gives the best appearance in the water, is to tie them on first the reverse way to that which they must take when finished, and then turn them back again, and retain them in that position with a couple of turns of the silk. In the salmon-fly the wings are often made up of six different feathers, each called a topping.

A Little Varnish added with a fine brush to the head, and also to the lower end next the tail, but with great care, prevents these parts from coming to pieces, and greatly adds to the lasting properties of the fly.

Hackles and Palmers.—The mode of tying the peacock-hackle (*fig.* 1), which is one of the simplest of all flies, is as follows:—Begin by whipping the hook on the gut, leaving a loose end



1 2

of the silk hanging from the shoulder, where the whipping is to be commenced. When the whipping has proceeded to

within two or three turns of the bend, include within its folds the ends of two or three peacock herls, which are to be left projecting beyond the bend; and after making these turns, fasten off. Then take a red cock's hackle, and smooth the fibres of it well; with a pair of scissors trim these off at the point, leaving the shank bare for about an eighth of an inch; next include this within two or three turns of the silk left at the shoulder, directing the hackle towards the gut and fastening off the silk. Then taking the bend of the hook between the finger and thumb of the left hand, lay hold of the herls with the right, and wind them carefully round the shank of the hook up to the point where the hackle is tied, where they are to be included in the silk which is still left there, and then cut off. The body is now complete, but the legs are still to be imitated by the hackle, which should be carefully wound round the hook above the herl; arranging the fibres as it is wound, by means of the picker, and fastening off at last by means of the silk which is still projecting and left for the purpose. Now cut off the silk at both ends, lay on carefully a very little varnish at each end, and the fly is complete. All palmers and hackles (*figs.* 2, 3, and 4)

are made on this principle, substituting various feathers for the cock's hackle, and various dubbings for the peacock-herl.

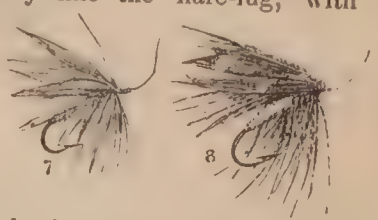
Simple Winged-Flies.—Sometimes a pair of wings are tied on at the same time as the hackle-point, and afterwards the hackle is wound round the shank, and thus serves to keep the wings from lying flat against the hook when in the water. (See the black gnat, hare-lug, yellow sally, oak-fly, caperer, &c.)

The Black Gnat (*fig.* 5) is tied in the same way as the peacock hackle, using a smaller hook (No. 13) and fine black silk. A small black ostrich herl forms the body, and a piece of the starling's wing-feather the wings. A very fine black cock's hackle is used for the legs.

The Hare-Lug (*fig.* 6) is composed of a body consisting of a dubbing

from the back of the hare's ear, making it thin and neat towards the tail, and pretty stout near the shoulder. The hook is of the same size as in the black gnat, and the wings are the same. After these are tied, pick out a little of the dubbing to make the legs.

The Yellow Sally (*fig.* 7) is tied exactly like the hare-lug, with the



substitution of yellow or buff mohair or fur for that of the hair, and the addition of a fine yellow cock's hackle for legs; wings from a feather from the inside of the thrush's wing. Hook No. 12.

The Oak-Fly (*fig.* 8).—The body is made of brown mohair and a little hare's-ear fur towards the tail. Legs of a bittern's hackle or partridge feather, or a furnace-cock's hackle; wings of a woodcock's wing-feather. Hook No. 8.

The Caperer (*fig.* 9) is made up as follows:—Body of rich brown floss-

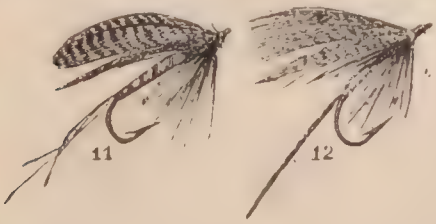
silk; legs of a fine red or brown hackle; wings of a woodcock's feather. Hook No. 9.

The Winged-palmer (*fig.* 10), a good common autumn fly, is made on the same plan as the peacock-hackle, but of a smaller size, and with the addition of a pair of wings made from the outside feather of the thrush's wing. The end of the body is finished

with a few turns of orange silk. Hook No. 9 or 10. It is the coch-y-bondhu of Wales.

Winged and Tailed Flies.—These are made like the last set of flies, except that at the time of whipping on the hook the fibres are included which are to constitute the tail. The body is then formed by the dubbing, floss-silk, or herl, and the wings tied as before. This set includes, among a vast variety of flies, the May-fly, green drake, stone-fly, March-brown, red spinner, &c.

The Green Drake or May-Fly (*fig.* 11).—Body made of yellow floss-silk or mohair, dyed a pale yellowish-green, and ribbed with bright yellow silk; tail of two or three hairs of the sable



or fichet, or of fine horse-hair from the mane; legs of a grey cock's hackle, dyed the same colour as the mohair, or of a ginger pile undyed; wings from the mallard's back feather dyed of the same yellowish-green. Hook No. 6 or 7.

The Green Drake (*fig.* 12) is made as follows:—Body of pale dun-coloured mohair; tail of two fibres from the feather of the mallard's back; legs of a brown or ginger cock's hackle; wings from the grey feather of the mallard's back, undyed. Hook No. 6.

The Stone-Fly (*fig.* 13).—Body of red mohair, ribbed with gold or yellow silk;

tail of two long fibres from a coarse red cock's hackle; legs a red cock's hackle, carried down over all the body: wings of the hen-pheasant's tail-feather or of the grey goose wing-feather. Hook No. 6.

The March-Brown (*fig.* 14).—This fly is made of two sizes; one on Hook No. 7, the other on No. 11 or 12. The body is of brown floss-silk; tail of two long fibres of the red cock's hackle; legs of brown cock's hackle; wings of a woodcock's feather.

The Red Spinner (*fig.* 15) is tied on hook No. 7. Body of red mohair, sometimes ribbed with gold; tail of two

fibres of a red cock's hackle; legs of the same hackle; wings of a brown mallard's feather.

The Winged Larva of Mr. Blacker (*fig.* 16) resembles the green drake in all but the body, which is prolonged separately from the hook by means of a couple of hog's bristles, which are tied in with it and the tail-hairs, and extend about a quarter of an inch beyond the bend. The silk or dubbing

is then carried from the shank to the bristles; and thus the fly has the appearance of a long body. The legs are often made with a dyed feather of the mallard's back, used as a hackle.

Extra Trout-Flies.—Those given in the preceding paragraphs will suffice for all common purposes; but they may be varied *ad infinitum* by the angler, to suit particular localities. If, however, he makes himself perfect in the manufacture and use of these, and has the stock of materials I have enumerated in page 317, it will be at all times easy for him to extend his list, either by imitating the prevalent natural fly, or that which is successfully employed by anglers familiar with the district. Mr. Stoddart is of opinion that for the trout, the red, brown, and black hackles, with or without wings, and the hare-lug, are sufficient for all ordinary purposes. This is perhaps carrying simplicity to an extreme length; but there can be no doubt that the young angler is often overwhelmed with

useless flies, as well as other complicated forms of fishing-tackle, in order to suit the trading propensities of tackle-makers. No doubt in Mr. Stoddart's case the above flies would be more successful than others attached to the line of a beginner; but even the above celebrated piscator does not maintain that no others will be more successful at times than the three he has selected, but that there is no absolute necessity for them. This certainly is in accordance with my own experience, as I have known a very successful angler who never possessed any fly but the red and black palmer and the black gnat. Still I have no doubt that at least as great a variety as I have enumerated will at certain times be useful, though some of them will only suit particular months. The following list will perhaps be some little aid to the young angler who is anxious to try a greater variety.

THE WREN'S TAIL.—Body of sable-fur and gold-coloured mohair mixed. No wings; legs of a wren's tail-feather, used as a hackle. Hook No. 8.

THE GROUSE-HACKLE.—Body of gold-coloured mohair mixed with the dark fur from the hare's ear. No wings; legs made with a reddish-brown grouse feather, used as a hackle. Hook No. 7.

THE DARK CLARET.—Body of claret mohair, fine towards the tail, and full towards the shank. Wings four, two below from the starling's wing, and the upper two from the partridge's tail.

THE SPIDER-FLY.—Body of lead-coloured floss-silk; legs of a small black cock's hackle below and above, with a hackle made from a woodcock's feather taken from near the butt-end of the wing. Hook No. 7.

THE LITTLE IRON-BLUE.—Body of slate-coloured mohair; tail of two fine hairs from a dark sable; legs of a fine dun cock's hackle; wings of the coot's or starling's wing-feather. Hook No. 9 or 10.

THE BLUE-BLOW.—Body of mole's fur; wings of the tomtit's tail-feather. Hook No. 14.

THE HARE'S EAR AND YELLOW.—Body the dark fur of a hare's ear, mixed with a little yellow mohair; wings of a starling's feather. Hook No. 8.

THE ANT-FLIES are of four kinds—he large and small red, and the large nd small black. The red are tied on Nos. 7 and 12. Body of amber mohair, made large towards the tail; legs of a red cock's hackle; wings of a starling's feather. The black have a body of black ostrich herl, with a black hackle for legs; wings of the blue feather of the jay's wing.

THE MEALY-WHITE NIGHT-FLY.—Body white rabbit-fur, made fully as large as a straw on a No. 5 hook; legs of a downy white hackle; wings of the soft mealy feathers of the white owl.

THE MEALY-BROWN NIGHT-FLY.—Body of the same size as the preceding, made of the fur of a tabby-rabbit; legs of a bittern's hackle, or a grey cock's; wings the brown feathers of a white owl. Hook No. 5 or 6.

SALMON-FLIES are made on the same principle as the trout-flies, but as they are larger, so they are capable of being tied with greater exactness and finish. They are generally of much more gaudy materials than the trout-flies; and in this respect they have latterly been used still more richly coloured than was formerly the case, even in Ireland. Formerly, very sober salmon-flies were ordinarily used in Scotland, the prevailing colours being grey, brown, buff, and brick-dust; but now it is found that a much more brilliant set of colours will answer far better, and the Irish favourites, viz., scarlet, bright yellow, blue, and green, are the fashion, united with less bright toppings—as, for instance, the tail-feather of the pheasant, or the back or breast of the bittern or turkey. In Wales more sober flies are still in vogue; straw colours, natural mottles, and pheasant or turkey feathers, being considered the most killing. Tinsels are, however, approved of in all three localities, and are used more or less in almost every salmon-fly. In nearly all cases this fly consists of a body, a head, legs, and tail, and wings of a very compound nature; but the mode of tying is very similar to that adopted in trout fly-making. Most salmon-flies are tied with a small loop of gut attached to the shank, instead of, as in the trout-fly, a full length of that material; sometimes a bristle or a piece of wire is bent for the purpose, and again in some cases the gut, either plain or twisted, is tied on as in the trout-fly. Whichever mode is adopted, the end or ends of the gut or bristle must be shaved off, and moulded with

the teeth into slight ridges, so as neither to present an abrupt and unsightly edge where they leave off, nor to be so smooth as to be liable to slip from the hook. This eye or length of gut is to be first whipped on to the hook in the usual way with strong waxed silk, which is then to be fastened off and removed; and for the subsequent tying, a finer and generally a bright-coloured silk adapted to the particular fly is to be employed.

We will now enter upon the construction of six salmon-flies, which are shown in the woodcuts of the exact size. Nos. 1 and 2 are well suited for either Scotland or Wales, and for comparatively clear waters; the remainder are calculated for more turbid water in Ireland or Scotland.

The Salmon-Fly, *No.* 1.—After tying on the loop of gut, take a piece of crimson silk about half a yard long, and fasten it on at the bend, leaving an end to reach beyond the shoulder; next take a part of a golden-pheasant's crest-feather for tail, and tie it on the upper side of the bend, also including a flat piece of gold tinsel; then dub

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the silk, after waxing it, with crimson mohair, and lap it round the shank for about one-third of the length; when arrived at this stage, tie in the point of a long and coarse cock's hackle, dyed crimson, then proceed with the rest of the silk and dubbing to complete the body. As soon as this part is finished, the dubbing must be removed from the remainder of the silk, which must be fastened off; now take a piece of the tail of the pheasant of the requisite length and substance for the wing, and a single herl of the peacock for the head, and tie them on firmly one above and the other below the shoulder of the hook, using the other piece of the silk left projecting at the shank-end, and laying the feathers for the wings either at once where they ought to go, or else tying them first the reverse way and then turning them over, and keeping them down with an extra turn or two of the silk over the root of the wing; fasten this off, and proceed to finish the body, for which purpose the hackle is first rolled round till it comes close under the wings, where it is fastened off, and then the gold tinsel is wound several times round the bare hook under the tail, then once over it, and afterwards spirally round the shank, following the hackle till it arrives at the shoulder, where it also must be fastened off, and neatly cut off with the hackle. The fly is now complete, with the exception of the head, which is made with the peacock's herl wound round the part of the shank left projecting beyond the wing, and is fastened with the same piece of silk as the wing, which fastening receives a touch of varnish with the brush kept for the purpose. This is one of the most simple of all salmon-flies, and is well adapted for the practice of the young fly-maker.

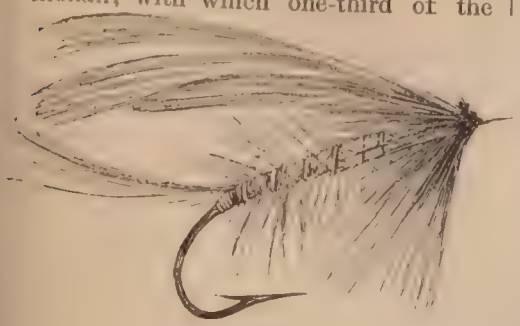
Small Salmon or Grilse Fly; *No.* 2.—This is tied almost exactly on the same principle as the last, but the materials, &c., being different, it

2

presents when finished a lighter and somewhat brighter aspect. The body is of brown mohair or weasel's fur, the last joint being of bright yellow floss-silk, finished off with a single turn of gold tinsel; tail of six or seven fibres of the golden pheasant's crest-feather; wings of two portions, the outer part being of the grey feather of the mallard, the inner of the yellow part of the web of the hen-pheasant's tail; a reddish-brown coarse cock's hackle is rolled over the whole of the mohair forming the body, and with it a piece of silver twist. The head is composed

of a few turns of the tying silk only, without any other materials.

GAUDY SALMON-FLY, *No.* 3.—After whipping on the loop, a portion of golden-pheasant's tail and a piece of silver twist are fastened on to the bend of the hook; after which the silk used in the process is dubbed with blood-red mohair, with which one-third of the



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shank is covered, then another third with orange, and finally, the remaining third with deep-green dyed wool. Corresponding with each division, and before proceeding to the next, a cock's hackle of the same colour as the body is tied on, and wound spirally round, finishing it off and tying it down with the silk used for the dubbing of each division. After completing the last division, the point of a bottle-green or purple cock's hackle is to be tied in, together with a pair of wings composed of two full golden pheasant's crest feathers, with two toppings of the yellow crest of the mackaw under; and in addition, a black ostrich herl for the head. After the wings are partly tied on, and before they are reversed, the silver twist is wound round, the purple hackle is then turned round and finished off; after which the wing is reversed and tied down, and the herl formed into the head in the usual way. It is a very light and taking fly in the water.

GAUDY SALMON-FLY, *No.* 4.—Tail of two slips of brown mallard's feather, with a thin topping of golden-pheasant's crest. This is tied on *after* making a short joint at the bend of the hook of gold tinsel and orange floss-silk. The tinsel is carried on under the latter, and is left for further use. Next tie in a black ostrich herl, and turn it round three times closely together; finish off and remove the end; then dub the silk with crimson mohair or wool, and make up one quarter of the shank with it for body; tie in a black cock's hackle, and make up another quarter by dubbing the silk with scarlet wool; then another quarter with the crimson, and tie in, when finishing this part a bright-red coarse cock's hackle. Now wind the black hackle up to the last quarter of the body, following it up with the gold tinsel, and fasten and remove the ends of both. Next take a pair of wings composed as follows—placing one of each sort of topping on each side in a corresponding manner—first, two long fibres of red mackaw; secondly, two portions of reddish black mottled turkey's feather not quite so long; thirdly, two portions of the back feather of the golden pheasant; fourthly, two short feathers of the blue lowrie or mackaw. These are to be tied on above the shoulder, and a piece of dark guinea-fowl's back feather below: also a black ostrich herl for head. In tying on wing feathers of this compound sort, pinch them flat between the finger and thumb, and do not attempt to tie them on the reverse way. After the wings are secure, and also the guinea-fowl's feathers for feelers, wind the last

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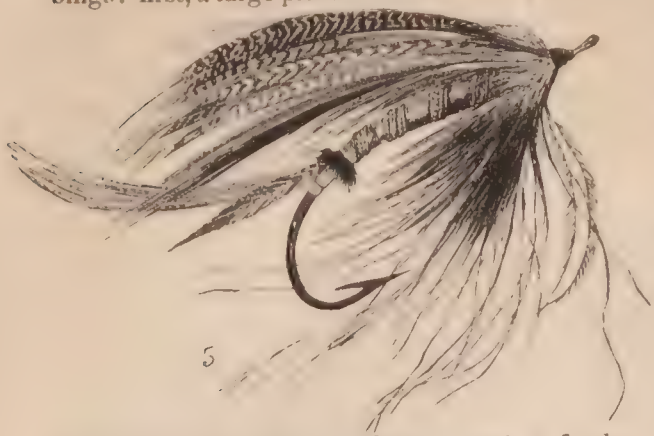
red hackle as a support to them, and then finish off with the herl for the head.

MEDIUM SALMON-FLY, *No* 5.—First whip on the loop as usual, then commence by fastening a piece of silver plait or braid, which is to make one turn at the bend of the hook, and is to be afterwards concealed by some turns of purple floss silk for about the eighth of an inch; next tie in for the tail a fine-pointed red cock's hackle and a golden-pheasant's crest-feather projecting beyond it; then a black ostrich herl, which is to conceal their root by making a raised ring of black above the silver braid, which is now allowed to hang over ready for use. The body is then made up of three equal portions of floss-silk, orange, yellow, and lilac, over which the silver braid is to be spirally wound. Next tie at the shoulder a blue jay's wing-

feather, to be used as a hackle, and then a compound wing of the following dubbings: first, a large piece of brown mallard's feather; secondly, a fibre on each side of the green or blue mackaw; thirdly, a dyed crimson cock's hackle on each side; fourthly, two slips of bustard's feather. Below this is to be tied a long tag of the short herls at the root of the ostrich feather, and surrounding the shoulders of both the wing and the feelers a portion of reddish mohair is tied on, and afterwards picked out so as to shade off gradually over both. Finally, a head is formed with a few turns of well-waxed silk. This is a very good and useful fly, and will take in a medium state of water, being neither very gaudy nor quite plain.



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A VERY GAUDY SALMON-FLY, *No.* 6.—Begin as usual, then fasten on at the bend a piece of tying silk, half a yard long; well wax it, and then lay on, first of all, at the bend, two or three turns of flat gold tinsel, which fasten off with the silk; next include in the silk the tail, consisting of a golden pheasant's crest-feather, a small bright crimson cock's hackle, dyed, and three or four fibres of a pale green mackaw's feather. Now tie in a short tuft of crimson wool, surrounding the hook, and do this either by using it as a dubbing or otherwise at discretion. In fastening this off, include a piece of twisted gold cord, and then dub the silk with snuff-coloured wool, mohair, or pig's wool, with which the lower half of the body is to be made up; finishing the upper half with crimson wool as a dubbing. In the interval between the two dubbings, tie the point of a large and coarse crimson-dyed cock's hackle, and, before finishing off the crimson dubbing, tie on first the feather of a cormorant's neck as a hackle; a dark guineafowl's feather will do, in the absence of the cormorant's feather. Next wind the gold cord spirally round the whole body, then lay down the crimson hackle, and finally the cormorant's neck-hackle, tying each down *seriatim*. A very large and handsome compound wing is now tied on, and with it a black ostrich-herl for the head. The wing is composed of the following toppings: first, two from the golden-pheasant's or bustard's tail-feathers; secondly, two fibres of the red mackaw; thirdly, two of the blue mackaw; fourthly, two of the bustard or brown wood-duck's feather. Under this lies the cormorant's neck-feather, which being used as a hackle, appears above and below the shoulder of the hook. This is a good spring-fly, and is the largest ordinary size suited for Scotland or Ireland

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SEA-TROUT FLIES may be made of sizes and colours intermediate between the trout and salmon-flies. They are tied of all colours, and with or without the addition of a gaudy tail of golden-pheasant fibres, and tinsel wound round the body. The following size and form, however, will suit the trout in lochs, and the average size of the sea-trout when ascending from the sea. The body is of brown mohair, legs of a black cock's hackle; wings of a brown mallard's feather; head of plain waxed silk. Hook No. 5 or 6. A good variation consists in using purple or scarlet dubbing for the body; red or lilac dyed hackle, and the green

dyed feather generally used for the May-fly for the wings; with a tail of a few fibres of the common pheasant's tail-feather. Numberless variations of these flies are made and sold, but the whole of them are fanciful creations of the maker's brain, and not imitations of any living insect. The fisherman, therefore, may please his own fancy, and try his skill in any way that strikes him, and perhaps the more novel the fly the better it may succeed, though there is still a considerable section of good anglers who adhere to the old-fashioned flies called the butcher, the doctor, &c.; but I fully believe that any slight variation or alteration from the annexed models, according to the contents of the angler's stock of materials, will be just as likely to succeed as the newest fancy that may be brought out from time to time. The whole of the above set are tied after the models of Mr. Blacker, but differ considerably from those published in his very beautiful series of plates. The change, however, is in favour of the fisherman, as I believe the flies will be found to be equally killing, and not nearly so expensive or difficult to tie as those published by him.

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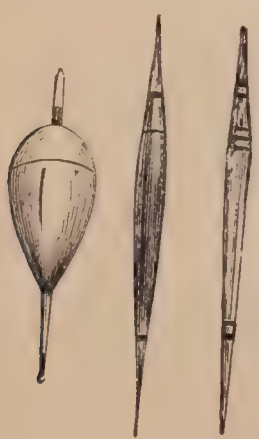
Sect. 5.—Floats, Landing-Net, Gaff, Basket, &c.

Floats are made of corks, quills, and reeds, and are constructed of



various sizes, to carry any number of shot, from four or five to ten times as many, according to the rapidity of the current. The most useful are the cork float (shown in the first figure) for heavy streams, and the quill for light streams. These have a little quill ring or cap to fix the float to the line at the required distance from the hook, according to the depth of the water, as ascertained by the plummet; but a "sliding float" is also made, for use where the spot to be fished is some distance from the angler and cannot be plumbed conveniently.

The Landing-Net is merely a hoop with a handle to it, and armed with a net for the purpose of taking the hooked fish out of the water without danger to the tackle or of losing the

fish. It is generally now made with a hollow handle, to take the top joints of the rod, and this handle screws off the ring, which is also jointed, for the convenience of carriage.

The Gaff and Landing-Hook are constructed for the same purpose. The simple hook now used, attached to a firm handle, inflicts the least severe wound, and is more manageable than the gaff.

The Basket or Creel is slung over the shoulder by a belt, and is made of various sizes, to suit the probable amount or weight of fish expected by the angler.

Fish-Bait-Kettles are made of tin, with a perforated lid, and a handle to carry them by. As has been already stated, those with double lids are the

best; and there is one made by Mr. Farlow, which is very convenient, as it can be suspended from the shoulders, pannier-fashion, by means of straps.

The Drag-Hook is a long line of strong whipcord wound on a thumb-reel, and armed with a three-hooked blunt drag weighted with lead, so that when a hook is caught in weeds or other impediment, the drag may be thrown on the same spot, and the weed dragged away with the hook, or at all events the greater portion of the line may be saved.

The Clearing-Ring is intended for the same purpose, and is a jointed-ring of heavy metal which opens and closes again with a catch. It is attached to a long line like the last, and is passed upon the end of the rod open, and when closed is slipped down the reel-line as low as possible, and then drawn to land, bringing sometimes the hook and obstacle with it, but generally breaking the casting-line near the hook or about the shot. This does not act so well as the drag-hook when a float is used.

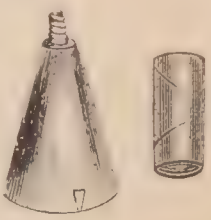
The Baiting-Needle (of which the best kind is that which has the eye

formed as here represented) is used for the purpose of passing the gimp or gut through the fish which is to be used as a bait.

Leads, for the prevention of kinking, have overcome one of the greatest difficulties which the troller formerly

had to contend with. The accompanying woodcut represents a form invented by Mr. Pennell, who first brought out one of a different form, consisting of a lead pipe suspended by a wire below the line, but has modified it in consequence of its tendency to hang in weeds. Mr. Francis's Field-lead is similar to the above, except that it tapers off at both ends, and therefore is more boat-shaped.

Plummets are of various kinds, the most common being either of solid lead as in the first, or of rolled sheet lead, as in the second of the accompanying figures. The plummet is



suspended on the hook, and dropped to the bottom of the water, and the float which is on the line is shifted up or down, according as it disappears in the water or is left above the surface.

The Bait-Box is generally only a flat box perforated with small holes in the lid, for containing worms, or gentles, or dead minnows, in bran; but Messrs. Dawson, of Bell-yard, Temple Bar, have brought out a very convenient gentle-box, with a little tray affixed, in which the gentles can be turned out as required; and as it is made to suspend to the button-hole, it is always ready to the hand.

The Disgorger is an instrument for removing the hook from the throat of those fish which swallow their bait, and is made of various forms. One end should be forked, and the other perforated with a hole, and ending with a sharp-cutting round surface like a spatula.

CHAPTER III.

BOTTOM-FISHING AND TROLLING.

Sect. 1.—The Fish angled for.

Every fish enumerated in the first chapter may be taken by bottom fishing—the noble salmon and the wary trout, as well as the minnow and the gudgeon. But almost all require some slight modification of the apparatus or bait employed, and of the mode of using them; and therefore each must

form a subject to be studied by itself. Commencing with the smaller varieties of fish, and those most easily caught, I shall take all in the order of their usual presentation to the young angler. With each variety it will be my purpose to specify—first, the kind of rod, hook, and line to be used; secondly, the best bait; thirdly, the time and place best suited for each kind of fish; and fourthly, the mode of fishing.

Sect. 2.—Fishing for Minnows, and similar Small Fish.

The Rod, Line, and Hook should all be fine and delicate, especially the last, which must be of the smallest size. Three or four hooks, whipped on fine gut or horse-hair, should be attached to a short line of horse-hair or silk, leaving each about three or four inches longer than the one next above it. A crow-quill float, and any light but stiff rod, will complete the outfit.

Minnows are found in small gravelly brooks, and sometimes in large rivers. They take freely pieces of the small red worm, especially in warm still weather. The lowest hook should swim close to the ground, as these fish seldom feed above mid-water. At the slightest indication of a bite the rod should be raised smartly, as many minnows will be taken while the worm is only partially in the mouth, and would be lost by delay.

The Stickleback may be taken exactly in the same way. When its spines are removed it forms an excellent bait for the larger kinds of fish.

The Bull-head lies under stones, and is angled for with a single small hook, the bait being allowed to float along very near the bed of the river. These fish are very voracious, and rush out upon the bait as it passes by their place of retreat.

The Loach also may be taken with the same kind of tackle and bait; but as it is neither of use for the table nor much fancied as a bait for larger fish, it is seldom sought after.

None of these fish require ground-baits, as when they exist they are usually so plentiful as to be easily obtained in large numbers.

Sect. 3.—Bleak-Fishing.

The Rod, Line, and Hook.—Two kinds of line are used for this fish—one similar to that just described under Minnow-fishing; the other, usually called *a paternoster line*, which is made as follows:—A bullet is attached to a strong line, and is dragged along the bottom of the river by it. A few inches above the bullet a strong and long bristle is whipped at right angles to the line, forming a cross with it (hence its name). To the ends of this bristle fine hooks are whipped in the ordinary way; and at intervals of seven, eight, or nine inches up the line other bristles are attached in a similar manner. In this mode four, six, or eight baited hooks are dragged along at intervals above the bed of the river, each hook being kept from entanglement by the stiffness of the bristles.

The Baits for the bleak are gentles, red-worms, caddis, paste, &c.; and ground bait should be used when it is intended to take any quantity of these fish. They make capital bait for trout and pike, but are very tender, and do not last long.

The Haunts of the Bleak are exceedingly extensive, it being found in almost every British river, and is very fond of the outlets of drains, &c. Mid-water is the best general depth to angle for them; but in warm weather they swim very near the surface, and in cold, quite on the bed of the river. In the former case they prefer the fly, and may then be taken in large numbers by whipping with a small black gnat, which forms a very good introduction to the young fly-fisher.

In Fishing for Bleak there is no great art; all that is required is to pull them out at once, but not so rapidly as with the minnow, as they do not adhere to the worm with the same pertinacity as those little fishes do.

Sect. 4.—Fishing for Dace and Roach.

The Tackle for these fish is the same for both. The Rod should be very light, but yet stiff and long. It is generally of bamboo or cane, about seventeen or eighteen feet long, or even a foot longer, as it is a most essential point in this kind of fishing to command a great extent of water without showing the person, and yet to drop the bait very gently into it. A light General Rod answers the pur-

pose pretty well, and the spare tops for fly-fishing will avail for common purposes in that department. Such a rod should be about seventeen feet long, and made of hickory or split cane; and it will suit either for trolling, spinning, or barbel-fishing with the lob-worm. (See woodcut, which gives a good idea of the common general rod in its cheapest form, with a spare top for fly-fishing.) The LINE should be very fine down to the FLOAT, which should be of swan-quill. Below the float it should be either of single hair or fine gut, with the knots unwhipped with silk in order to be more invisible. The length of hair being longer than those of gut, the knots are not so frequent; but as the hair is not so strong as the gut, more dexterity is required in landing a large fish. The HOOK should be No. 10 or 12; and enough split-shot should be attached to the line, beginning about a foot above the

hook, to immerse the float three-fourths of its length.

THE BAITS FOR ROACH AND DACE are any of the following:—Gentles, paste coloured with vermilion, worms well scoured, greaves, flies, and grubs. GROUND-BAITS are very generally used, and should be composed of some of the above baits, used on the principles described in page 314.

THE LOCALITIES best suited for dace and roach-fishing are moderately rapid and deep streams. Dace are fond of mill-streams, but are also to be found in more sluggish parts of the rivers. Both fish spawn towards the end of May, but the dace recruits the soonest, and is in fair condition by the middle of July, while the roach is about a month longer, and does not get to its best till October.

THESE FISH MAY BE ANGLED FOR in the following manner:—First, plumb the depth and allow your bait to float near the bottom, by adjusting your line to the required length. Then keep your eye on the float, and when you see it move downwards from the biting of the fish, strike smartly, but gently. The rod, line, float, and bait ought to be perpendicular to one another, and no more line should be used than necessary, so as to lose no time in striking; which evolution should be from the wrist only, the arm being nearly motionless the while. When the fish is securely hooked, great care must be used in landing him, as he will break the line inevitably if he is jerked, or if not carefully humoured, especially if hair is used in lieu of gut. The roach will occasionally take the fly, and the dace does so freely, often affording capital sport. Small black and red palmers are the most fancied, and they are rendered more attractive if the hook is tipped by a gentle, or an imitation in the form of a piece of wash-leather or bacon-rind.

GRAINING, RUDD, AND AZURINE may be taken in the same way as the above. Rudd require a rather larger hook, and a coarser line will not interfere with their capture.

SECT. 5.—CHUB-FISHING.

THE CHUB is a larger fish than the dace, but much like it in habits and appearance, except that it is thicker, and golden on the cheeks and gill-covers instead of silvery. Several modes of taking this fish are practised, one of which is similar to that already described for roach and dace, but requiring a larger hook and stronger tackle. Being a very violent fish when first hooked, although soon giving in, it is very apt to break fine lines. It also frequents weedy places and stumps of trees.

SINKING AND DRAWING is therefore practised, because by this mode the line is not so likely to be entangled as with the ordinary line and float. A strong rod and line are used for this purpose, without a float, and the line

is shotted so as just to sink it. When the hook, which should be about No. 6, is baited, drop it gently in some clear place and suffer it to sink to the bottom, then immediately draw it up again as obliquely as the weeds, &c., will allow, and with a quivering or gently jerking motion to imitate the actions of aquatic insects.

Chub are also taken in large numbers by dipping with the natural fly or humble-bee, cockchafer, grasshopper, and imitations of them, large red, black, and brown palmers, &c. They are fond, too, of cheese, lumps of greaves, and anything fat and luscious.

Sect. 6.—Gudgeon-Fishing.

The Tackle for the Gudgeon should be as fine as that for the minnow, and the hook or hooks No. 8 or 9. Very fine shot also must be used, and a light quill-float.

The Bait which is the most killing for gudgeon is the red-worm, next to which is the gentle or caddis-worm, and then come the various pastes. Instead of ground-baiting, raking the bottom with a long rake is practised, which has the same effect in attracting the fish, and in which alone gudgeon-fishing differs from that described in the first section of this chapter. In the Thames gudgeon are taken in great numbers from the punt, but in smaller rivers there is no necessity for this accessory.

The Hook must always trail on the ground, as this fish invariably feeds there. It should be steadily drawn along, or suffered to remain quiescent, some fishermen using several rods at once. The moment a bite is seen, the wrist should be raised and the fish landed, as it is too small to endanger the tackle, however light and frail.

Sect. 7.—Fishing for Barbel.

The Ledger-Line is that most commonly used for taking this fish, and may be described as follows:—The line should be of single gut, three or four feet long, with a No. 5 hook tied on it, and a single large shot firmly fixed about a foot from the hook. Upon the part of the gut above this shot a bullet with a hole in it should freely play, and the ledger-line, after the bullet is dropped on it, may be attached to a long silk or hair-line in the usual way. If the punt is used the Rod should be short and stiff, but if the fishing is from the bank of the river, one at least sixteen feet long will be required, but still stiff and free from play. The Line should be thirty or forty yards in length, and of good strength; and a winch will of course be required.

Float-Angling is also practised for barbel, and in roach-fishing it is very common to hook these fish, but as they plunge very desperately when hooked, they often break away with the fine tackle used in roach-fishing. When the barbel is the chief object in float-fishing, the line must be of very strong gut, and a cork-float should be used. The rod may be the general rod already described, or the light one adapted for roach and dace-fishing. A long line and winch are doubly necessary in this kind of fishing.

Ground-Baiting for barbel is always practised, and without it there is very little chance of good sport in any given locality. If, therefore, the fishing is to be from a punt, the ground-baits should have been diligently used overnight, and repeated at intervals till the end of the fishing, or it will be in vain. The Best Baits are—for clear water, red-worms, well-scoured gentles, and greaves; in muddy water, lob-worms or marsh-worms, cheese or paste, may be used; but whatever bait is fixed on should completely cover the hook; thus one, two, or three gentles will be required, two red-worms or a lump of greaves. If lob-worms are employed, one will generally conceal the hook; but as these fish gradually suck their bait into their small mouths, it is important to conceal the hook not only from the eye, but from their sense of touch.

The Season for Barbel-Fishing in the Thames begins in June; but the fish have never then recovered from spawning, and in many cases are full of roe. It is nearly August before they are fit to be taken, as a rule. The best times for fishing are early in the morning (especially after rain), and quite late in the evening; but barbel may be taken during the afternoon also, though they then bite much less freely. The most likely spots where they may be found are the deeps of rapid rivers, where they lie in small shoals; under

bridges they are very apt to lie, and round piles, or at the foot of floodgates clear of the rapids, they often remain quite stationary for hours, and are then sometimes taken by unfair means—such as eel-spears, landing-hooks, &c.

THE MODE OF FISHING FOR BARBEL with the ledger-line and punt is as follows :—The punt is moored across the space ground-baited over-night; the short rod is held over the stream, and the bait gently dropped into the water, keeping the line moderately "taut,"—not so much as to prevent the fish pulling the bait slightly through the bullet, but still enough to show when he is actually sucking it in. When the point of the rod indicates this action, strike smartly, and the hook is sure to get secure hold of his mouth, and, unless he is a very large fish, he is quite safe ; but if very large, his struggles with his tail will be likely to break the line, and even sometimes to carry away the top joint of the rod. In this case (that is, if he is a strong fish), the line must be suffered to run out as far as the weeds, &c., will allow ; but it must always be managed so that the fish is kept in clear water, as he fights most energetically among piles or weeds. A landing-net or hook should always be at hand, and an assistant will then save all trouble by bringing the fish to shore ; but if this can be avoided without danger of losing the fish, and the sport is desired to be prolonged, he may be played till exhausted, and then brought out without risk by the landing-net used in the punt. The same mode may be adopted in fishing from the shore, but here, as the angler can run with his fish if the weeds are not very rife, he may play him to great advantage. Some anglers consider the sport afforded by this fish almost equal to that of the trout, and superior to the grayling.

SECT. 8.—TENCH AND CARP FISHING, ALSO CRUCIAN AND BREAM.

THE TACKLE for these fish should be as follows :—ROD, an ordinary bottom-rod—the general one already described will suffice ; LINE of plaited silk or twisted hair, with a good length of stout gut ; FLOAT of cork or swan-quill ; HOOK, No. 6 or 7. Sometimes, as in fishing for chub, *sinking and drawing* are practised exactly as there described.

GROUND-BAITING over-night is always to be practised for carp or tench if the punt is to be used ; and if the angler fishes from the bank, he should cast in a little of this useful accessory every few minutes.

THE BEST BAITS are a couple of red-worms or gentles ; sometimes one of each will take the fancy of the carp, which is a very fickle and cautious fish, and difficult to bring to hand ; but all sorts of baits succeed at times and fail at others. Green peas and wheat (both boiled until the skin cracks), and even a piece of parboiled potato, are occasionally used with good effect ; while paste, grasshoppers, wasp-grubs, and indeed the whole range of the bait-catalogue, will be of service.

CARP AND TENCH are in season from about August to April, the latter spawning rather the later of the two. Both are usually met with in ponds and ornamental waters, and occasionally in sluggish streams ; but they are seldom killed with a bait in any numbers, except in strictly-preserved waters, as they are rendered extremely cunning and wary if often fished, especially the large ones. Both these fish take a bait better after rain than at any other time. The deepest and stillest parts of the river or pond are the most likely places to find them, but in summer they are very fond of basking near the surface among the weeds, and it is then extremely difficult to persuade them to take any bait.

IN FISHING FOR EITHER TENCH OR CARP great care must be taken by the angler to keep well out of sight, as they are so cautious as to refuse all baits when alarmed by the sight of man ; and the line must also be very carefully and lightly dropped into the water. Tench lie in the mud, and often afford no indication of their presence when they are in good numbers ; but by plumbing the water carefully, and patiently suspending the bait a very few inches above the mud, they may sometimes be enticed out, and they more readily take the bait in the dusk of the evening than at any other time. For the carp two or three rods may be used, as the bait must be left for a long time quietly in one spot, where the carp will often watch it most jealously for some time, and

then when perfectly satisfied of its freedom from guile he will at last take it. Even with half a dozen rods there is no danger of the angler being overdone with more than one fish at a time. The bait should be suspended about a foot from the bottom.

THE CRUCIAN may occasionally be caught in the same way as the common carp, but being a very much rarer fish, it seldom comes into the angler's hands, except as an accidental take.

BREAM require much the same kind of tackle and management as carp and tench, but as they bite more freely, the same amount of patience and caution is not essential. They are chiefly found in deep but rapid rivers running through rich alluvial soils.

SECT. 9.—PERCH-FISHING, INCLUDING THE RUFF OR POPE.

FOR SMALL PERCH, such as are most commonly met with, a "general rod" will suffice; and the common line with good-sized gut, and a No. 4 or 5 hook baited with lob-worms, or almost any other worm, or with the caddis, caterpillar, or wasp-grub. These baits must be varied till some one is successful; or if it is known beforehand what bait suits the particular locality, that one should be selected. The paternoster line, armed with various baits, may be used if the angler is not in possession of the above kind of information; and as the perch swims and feeds at all depths, it is the best kind of tackle in deep water. In rivers where many weeds exist, or where there are piles, or roots, or trees, this tackle is not so manageable, and the sinking and drawing plan must be adopted.

FOR LARGE PERCH, the minnow, either dead or alive, is the best bait; and both may be used at discretion. For open and clear water, or in running streams, the dead minnow with spinning-tackle is the most killing bait; or the gudgeon may be used according to the plan with the parr-tail (page 315), and with the perch I have known it to be a most efficient lure. The gorge-hook (same page) is also successful, and is particularly serviceable in awkward and weedy rivers, where the spinning-tackle can scarcely be used

THE SEASON FOR PERCH is from the end of June to about March, as they are very heavy in spawn in the last-mentioned month, and spawn in April. They bite with varying degrees of readiness, and at almost all hours of the day. It is generally supposed that windy weather is the most likely to tempt these fish, or at all events that they are as free to take the bait then as at other times. Such, however, is not the result of my own experience, as I have always found a marked difference in perch as well as other fish in connection with strong winds, and also with the time of day. Young anglers, therefore, should take this *dictum* with some caution.

IN THE MODES OF USING THE BAIT little difference need be made from those recommended for roach and dace, if the perch sought for are small; but in localities where large perch may be expected, and where the live or dead fish bait is used, some considerable variation must be practised. Hitherto I have not had occasion to describe the mode of using THE LIVE AND DEAD FISH BAITS; but as we are now considering their adoption in taking perch, it will be proper here to enter upon the subject. I have already (page 316) alluded to the mode of applying the live minnow to the hook, or rather of inserting the latter in the back of the fish close to its fin. When this has been done, and the gut is properly shotted with about two or three No. 1 shot, quietly drop in the fish at some distance from the shore, and let it take its own course, swimming where it chooses. A float is only a hindrance to the live bait; and as it is dragged about on the surface of the water, it serves to attract the attention of the perch, and is very apt to scare them away. As soon as the perch is seen or felt to take the bait, strike pretty firmly, though not with much force. Live frogs may be used in the same way, as well as newts.

SPINNING for perch is practised as follows:—The bait being applied according to either of the methods described at page 315, the angler should use the general rod with the short top; a reel and reel-line of plaited silk, or twisted hair and silk, will be necessary, and a good length of strong gut (or, when pike are likely to be met with, of gimp), fitted with one or two box-swivels. With this apparatus the angler proceeds as follows:—He first

casts or throws the minnow down the stream, if there is any, or, if in still water, as far out as he can; then, pulling the bait gently yet firmly to him for a yard or so, it revolves rapidly on its axis, and must be allowed to sink for a few inches at the end of that distance by his ceasing to draw in. The angler then repeats the operation till he brings the bait out of the water, when a cast must be made in a fresh direction, but exactly as before in principle. It is obvious that for this purpose a rod of good length will command a greater extent of water and a more numerous series of spins, and that running water materially assists the spinning; still, in dead water a well-mounted minnow or gudgeon may be spun with great effect, and will kill there in preference to any other bait, except perhaps a live one of the same species.

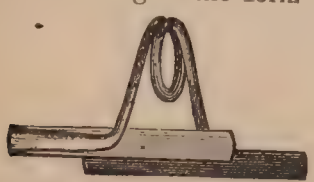
The Gorge-Hook is used with the full-sized trolling-rod and a long line, a yard or two of which is pulled out in a loop clear of the reel, and held loose in the left hand. Cast as gently as possible the minnow from you down-stream, or out into the water if it is still. In thus casting, the loose portion of line is expended, and the bait is thrown considerably further than it otherwise would be. Then begin to wind up a little at a time, stop, and wind again; thus imitating the actions of the living small fish represented by the dead bait. When the length of line is reduced to a manageable amount, the action may be varied a little, and the fish may be eased downwards or upwards or among piles or other likely places; but in all cases proceeding by slight jerks, and at the same time not too rapidly. When the bait is thus brought to hand again, repeat as before, and try all likely spots—first casting and drawing over and through the nearest places, and then extending the reach to the most distant ones. The expert angler will always study the actions of living fish, and endeavour to imitate them, which example is far better than any precept that can be given in print.

Sect. 10.—Pike-Fishing.

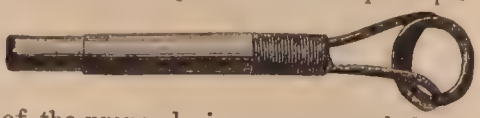
As these fish are strong and often of good size, and are furnished with sharp teeth, the tackle must be in proportion.

The Rod must necessarily be stronger than the "general rod" before described, but if made too long, as is very frequently the case, it becomes unwieldy and very tiring to the angler. Mr. Pennell says on this subject:—"A 12-foot rod is that which, on the whole, I have found to be certainly the most useful and efficient as a general pike rod, taking into account all the different branches of jack-fishing for which it may be required—spinning, gorge-baiting, live-baiting, &c. Were the rod intended to be used with the live-bait only, perhaps a foot or two longer might be preferable, as in bank-fishing it is of advantage to be able to cover as much water as possible with a short line, and thus spare the bait the knocking about of long casts. With the gorge-bait it is very seldom necessary to cast more than 20 or 25 yards, whilst with a 12 foot hickory rod of the proper build 40 yards at least may be covered by a tolerably expert spinner. I say a *hickory* rod, because I know as a fact that with such a rod a cast to the distance stated may be made, having done it myself. Nearly or quite equal results might very probably be obtained with a bamboo rod of equal length; but, not having actually seen such a cast made and measured, I cannot assert that it is so. My experience of the two kinds of woods leads me to give the preference to hickory for any jack-rod under 12 or 13 feet in length. Above these dimensions the difference in weight, slight as it is, would tell decidedly in favour of bamboo. This question of weight, indeed, has probably led a majority of trollers to give the preference to bamboo over hickory. It is only natural to imagine that, as the one is hollow and the other solid, the former must have a very great advantage over the latter. They would, perhaps, be surprised if they were told that the actual proportionate difference in weight is little more than 10 per cent., or, in a 12-foot rod, 3 oz.; but such is the case. I weighed a solid 12-foot rod against one of East-India bamboo of the same length, and the weights were,—solid rod, 1 lb. 10 oz., and hollow rod, 1 lb. 7 oz. . . . . I have said that, on the whole, experiment has led me to prefer a hickory rod to one of any other wood; but I used the expression 'hickory' rather in its colloquial than

literal sense, as, though my jack-rod is one which would be catalogued by fishing-tackle makers under that designation, it is, in fact, formed out of hickory and greenheart—hickory for the butt and for the two middle joints, and greenheart for the top. A hollow butt is of course unnecessary in a jack-rod, as the stiff upright rings on the top joints prevent them under any circumstances from being stowed away in it; but if from any cause or fancy a hollow butt should be desired, ash would have to be substituted for hickory, as the latter will not stand being bored. Sufficient thickness and strength at the butt without too much weight are essential to give a good grasp for the fingers, and both these *desiderata* are fulfilled by hickory. Hickory gives, moreover, precisely the degree of weight and elasticity to the middle joints necessary for the 'liveliness' and play of the rod, whilst for the top joint, where stiffness and strength combined are indispensable, greenheart is the very pink of perfection. . . . . The top joint of a spinning-rod must be strong enough and stiff enough to strike a fish effectually at the end of at least 20 or 30 yards of line, and as the amount of force required to be exerted depends entirely upon the weight of the bait and the size of the hooks used, at least three different lengths of top, of corresponding strengths, are necessary for an efficient trolling-rod." The rings should be fixed on upright, and made of steel wire; but for the bottom ring the ordinary small rings do not suffice, owing to the tendency of the line to catch round it in making the cast. "The bottom ring should therefore be made in the form that is called 'pronged,' out of thick iron-wire twisted into a ring in the form shown



in the woodcut annexed, with separate side-pieces brazed on. The perpendicular supports or arms being slightly wider apart at the bottom than at the apex, throw off instantly any curls of the line which may be inclined to twist round them. This will be found a really great practical advantage in spinning. Of even greater importance, however, is the form of the top ring, as this is both more liable to catch in the line and more difficult to clear. The pattern of ring of which the engraving is a copy, is, to a certain extent, a modification or adaptation of the principle



of the pronged ring recommended for the bottom joint. After being lapped over to within about half an inch of the ring, the wire is made to branch out in the shape of a V, the upper points or sides forming a continuation of the ring itself. These sides act as a sort of guard to throw off the line, if it should curl over, whilst the position of the ring makes it almost impossible for the line to get above it so as to hitch. As regards the number of rings, the following will be found best for a 12-foot rod:—One large ring just below the ferrule of the bottom joint, two on the second joint, three on the third joint, and five on the top joint, when the top is of the full length—eleven in all." A REEL is wanted, capable of holding from 60 to 80 yards of line; it should be a large barrelled check-winch, which pays out the line to the exact extent required, without requiring to be touched. The LINE should be of plaited silk, and a pale green tint is the best. A LEAD for the prevention of kinking will be needed when spinning, with one or two accompanying swivels, as shown in page 328. The SWIVELS used are of two kinds, the box-swivel and the hook-swivel—the former being shown in page 311, and the latter differing from it in having at one end a flexible hook which admits of a loop being slipped on or taken off at will. TRACES are formed of lengths of gut or gimp attached to swivels—the single trace being about 18 inches in length, with a loop at one end and a hook-swivel at the other; and the double-trace, consisting of two such lengths connected by a box-swivel. The lead as well as the box-swivel should come between these two lengths. The swivels should be oiled both before and after being used, as, if they get set, the loss of a good fish may be the result.

THE BAITS used for pike are of all descriptions, from the common lob-

worm and ordinary hook, which will often take jack—*alias* small pike—through all the degrees of live minnows and other fish, as well as frogs and newts, dead minnows and gudgeons, artificial minnows and gudgeons, and even the artificial fly. These various baits are used also in almost as many different ways, of which some have been already described in the list of baits, under the head of "Dead Fish as Baits." But besides these, the snap-hook bait is employed at those times when pike are shy of gorging, and inclined to eject the bait, or *blow* it out, as the angler denominates this act.

Snap-Fishing with the dead bait is only effected in the form of spinning, which will be treated of in due course; and the following observations will be confined to live-baiting. The snap-hook is either the plain or the spring snap-hook, the latter of which I cannot recommend, as it is apt to destroy the life of the fish very rapidly, and is a cruel mode of baiting as well as being of little real utility. The plain snap is made in several ways, the ordinary method being as follows:—Take two No. 4 hooks, and tie them back to back, and at the top of the shanks of these tie on a No. 8 hook, ending in an eye (see snap-hooks, *fig.* 1, facing page 309), to which the gimp is to be affixed; or they may be whipped on to the gimp without the eye; or a triangle is used, instead of a pair of large hooks, and the small hook is whipped on the gimp a little way above the triangle. The small hook is passed through the back of the fish close to the fin, while the larger hooks are allowed to hang down by its side. A modification of this method is shown in the opposite plate, which is thus described by Mr. Pennell:—"*Fig.* 1 represents the arrangement of hooks in the flight, and *fig.* 2 the same when baited. In baiting, the gimp is passed under a good broad strip of skin with the baiting-needle in two separate stitches if necessary, and pulled through till the shank of the small hook (*a*) is brought up close to the side of the bait below the skin—this keeps the large flying triangle (*b*) at a proper distance and in its correct position under the shoulder of the bait. It is of importance, to secure the full killing powers of this or any other tackle, that the proportion between the size of the hooks and the bait with which they are used should be preserved. The bait shown in the engraving—a small dace—is of the proper size for those hooks. The hooks should be of the sneck-bend pattern. This method of fastening the gimp under a strip of skin is much better, both for the longevity and liveliness of the bait, than the passing of a hook through its lips, and on humane considerations is also to be preferred; as whilst experiments have demonstrated that the bodies of fish are capable of feeling but a very slight amount of pain, it is well-known that nothing causes so much suffering as any interference with the organs of breathing. The hooks should be tied on about a foot and a half of fine stained gimp, with a loop at the other end which can be most conveniently attached to the upper portion of the trace (also composed of two or three feet of stained gimp) by means of a hook swivel (*fig.* 3), which will also have the effect of keeping the lead in its proper place. A lead of the shape drawn is neater and shows less in the water than one of the ordinary bullet form, and is therefore to be preferred."

The Spring Snap-Bait is a complicated machine composed of a case confining the shanks of the hooks, and keeping them in a position resembling the common snap (shown in *fig.* 1, p. 309), but capable of being drawn out and thereby allowing them to be expanded by means of the spring. It is baited, like the common snap, by inserting the small hook near the back fin, and acts thus:—The pike having seized the bait, the angler strikes, thereby drawing away the case from the shank of the hooks, which then expand in the pike's mouth, and assume the shape seen in *fig.* 2, p. 309. As, however, it is nearly impossible for the hooks to get a firm hold, the invention is practically useless.

Pike are in Season from June to February, but the best time for sport is in the autumn, when the weeds have rotted. They are most commonly taken of good size in artificial waters, or in deep alluvial rivers. In these situations there are almost always great quantities of weeds, and when these exist in full vigour it is almost impossible to land large pike even if they are hooked. The bait also can scarcely, at such times and situations, be properly manœuvred,

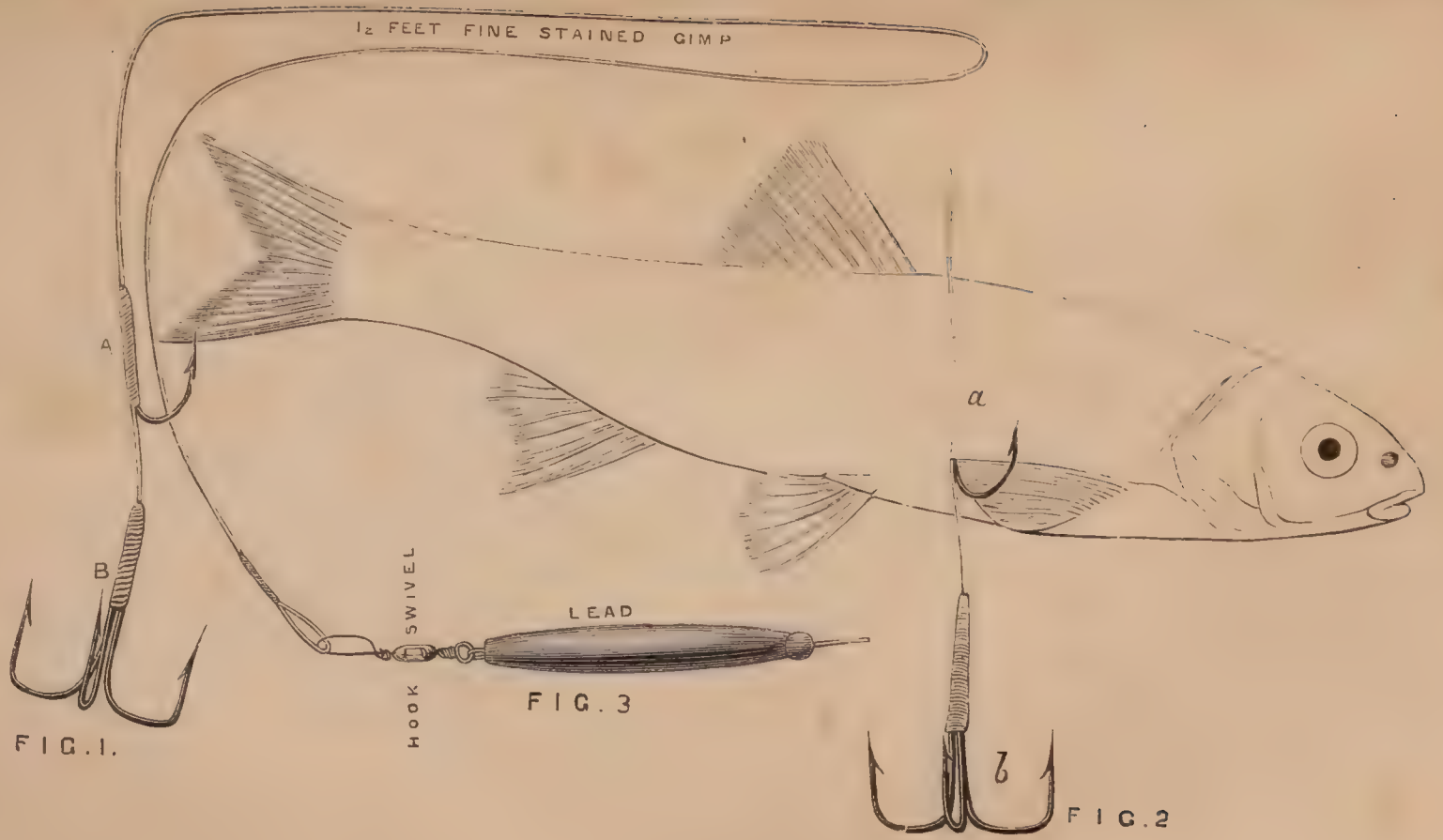


FIG. 1.

FIG. 3

FIG. 2

LIVE BAIT TACKLE.

and hence it is by common consent considered that pike, though perfectly edible, should not be angled for till after Michaelmas, from which time till February the water is in good order for their capture.

THE MODE OF FISHING for pike varies with the particular hook and bait employed. If the LIVE BAIT is used with the ordinary hook, it can only be successful at times when the fish are voracious and ready for any bait, which, indeed, they often are. If this happens to be the case, the bait must be gently passed into the water, and will be more easily managed with a float, as with the length of line required in pike-fishing it is impossible otherwise to maintain a proper depth for the bait, which should as far as possible be made to swim at mid-water. This is effected by the float keeping the bait up, and the leaded line preventing its rising to the surface. If the bait seeks the weeds or other shelter it must be stopped, and if dull and sluggish it must be stimulated by a gentle shaking of the rod. When removing the bait for a fresh throw, great care should be taken to do this gently, as a very little extra force will make a great difference in the duration of the life of the fish; and not only so, but the gentle mode will give the bait less pain than any other. The use of live baits is always more or less cruel, and every unnecessary degree of pain should be avoided. When the bait is seized by the pike, which may be known by the float disappearing under the water, or by his meeting with a check as he draws in the line, the angler will probably find the fish move off if he slightly slackens the line; if so, or if on raising the point of the rod he feels a tug, he should strike smartly. If this is cleverly done the fish will be firmly hooked, and, unless the tackle be faulty, the fish may be landed with the aid of a little skilful management. Pike may be played with great advantage, and a considerable increase to the interest of the sport. The principle consists in yielding to him for a time, by letting out the line as far as is prudent and the absence of weeds, &c. will allow; and when otherwise, making the elastic power of his rod withstand his progress by advancing the butt. In this way he will at last be tired out, and may then be landed safely by means of the landing-net.

TROLLING by means of the dead gorge-bait is a more sportsmanlike method of taking pike than the foregoing, and comes next to spinning; but it is not so much in vogue as formerly, except in weedy localities, where it certainly has advantages over spinning, though not so effective in open water. It requires the rod, line, and reel as already described, with the apparatus peculiar to the gorge-hook—viz., cork-float, swivel-traces, gorge-hooks, and bait. When these are all artistically adjusted, the bait must be manœuvred in the manner already described at page 334 for perch, and it will generally be successful where good fish abound, and the fishing for them is attempted at the proper season. The butt of the rod should be rested against the thigh or groin, and it should be grasped by the hand about eighteen inches higher up, which will give the angler great power over his rod, and also leave the left hand at liberty to manage the line, a loop or two of which should be held in that hand, ready to "pay out," as the sailors say, when the bait is cast. When a pike is believed to have seized the bait, ascertain the fact by tightening the line as mentioned in regard to snap-fishing, but do not strike; give him plenty of time (five minutes or more) to enable him to pouch the bait, then strike, not too smartly, and play or not, as before mentioned.

IN REMOVING THE BAIT FROM THE MOUTH of the pike after landing him, be careful of his jaws and teeth, which sometimes inflict severe wounds. The first thing to be done is to knock him on the head, which will enable you to recover your hooks and gimp at your leisure, whereas by attempting, by means of the disgorger, to remove them while he is alive, great risk is incurred not only to them, but to your own fingers. After he is quite dead, prop open the mouth, and if the bait is still there, liberate the hooks with the knife, and remove the bait; but if this has been swallowed, make an incision into the stomach at the spot where the bait is felt to be, and remove the hooks through the opening.

SPINNING FOR PIKE is by far the most sportsmanlike method of taking that fish, and a great deal of attention has

been paid of late years to the construction of the most efficient "flights," in order to avoid the loss of fish which is so common with ordinary flights, not one half the fish which are hooked being landed. Mr. Pennell says, in his "Book of the Pike," "The principle which I am convinced should be paramount in the construction of all such flights is the substituting of flying triangles (*i.e.* triangles kept loose from the bait by short links of their own) for triangles or any other hooks whipped on to the central link, and even of flying triangles using as few as possible. The detailed arrangements of these, size, shape, &c., which experience has proved to me to be the best, are shown in the woodcut. These diagrams represent the three sizes of tackle necessary for all ordinary baits —that is, from a gudgeon of medium length up to a fair-sized dace. I never spin with a larger bait than this myself, but for those who do, flights on the pattern of No. 4 should be dressed proportionately larger. No. 1, not included here, will be figured in a future chapter on trout-spinning. It is, however, precisely on the same principle as No. 2, but less in size, and is a very useful flight with a small gudgeon or bleak, in hot sunny weather, or when the water is low and bright. There would be no reason for arming flight No 4 with two triangles instead of one, if it could be insured that all the fish run would be in proportion to the bait, as in that case they would be certain to take the one large triangle well into their mouths, when of course they would be hooked. It frequently happens, however, that small pike run at a large bait, the result of which is that they often only seize it by the head or tail, when a single triangle would be very likely to miss. The upper triangle in No. 4 is, it will be observed, attached to the lip-hook (the link of it can be made to form the two loops), so that it must always hang near the shoulder of the bait. The under triangle hangs lower down near the tail. The question of the relative size and proportion of the hooks to the bait is, of course, of the utmost importance, as, if the hooks are too small, the pike very probably escapes being struck, and if too large the bait will not spin. I should therefore strongly urge all spinners who may be disposed to try this tackle to keep at least the three smallest of these exact sizes of flights in their trolling case." The large tail-hook here represented, and the reverse hook just above it, are now made out of a single piece of wire, and are consequently easier to tie on and less clumsy than when two separate hooks are used.

The directions for baiting are as follows :—"First, to fix the tail-hook, insert the point by the side or lateral line of the bait near to the tail, and passing it under a broadish strip of the skin and through the end of the fleshy part of the tail, bring it out as near the base of the tail-fin as practicable. Next insert the small reversed hook, in such a position as to curve the bait's tail nearly to a right angle. Finally, pass the lip-hook through both its lips, always putting it through the upper lip first when the bait is a gudgeon, and through the lower one first with all others. This is very important in securing a really brilliant spin. The flying triangle or triangles should not be hooked into the bait in any way, but be allowed to fly loose in the position shown in the engraving. The upper, that is, the shoulder portion of the body of the bait, should lie perfectly straight, and great care must be taken that the gimp or gut is tightened sufficiently to prevent any strain on the lips of the bait, and yet not so tight as in any degree to bend or crook its body. If these directions are not exactly attended to the bait will not spin."

The mode of spinning is thus given : —"The bait being placed on the flight, and hanging about two yards from the top of the rod, the spinner unwinds from the reel as much line as he thinks he can manage, allowing it to fall in loose coils at his feet, and, giving the bait one or two pendulum-like movements, swings it vigorously out in the direction in which he wishes to cast, at the same time letting go the line altogether, and permitting the bait to run out to its full extent." The best direction to cast over running water is diagonally, or in a direction rather slanting down and across the stream; in stagnant waters, the angler casts his bait wherever he supposes the fish to be. "After allowing a few moments (according to the depth of the water) for the bait to sink, he lowers the point of the rod to within a foot or so of the surface, and, holding it at right angles to the bait, begins drawing in the line with his left hand, making with his right a corresponding backward move-

SPINNING-FLIGHTS.

ment of the rod between each 'draw.' The object of this movement of the rod, which to the spinner soon becomes a sort of mechanical seesaw, is to prevent the bait being stationary, whilst the left hand is preparing for a fresh draw; and in order to accomplish it satisfactorily, the most convenient plan is to hold the rod firmly with the right hand just below the lowest ring, letting the line pass between the upper joints of the middle and fore finger, and resting the butt of the rod firmly against the hip. In spinning from a punt, an agreeable change of posture is obtained by standing with the right foot on the side or well of the boat and partially supporting the elbow and rod on the knee. The draws or pulls, and the corresponding movements of the rod, must of course be varied in length and rapidity according to the depth of water, size of bait, and other circumstances; but a good medium speed when the left hand, or rather the line, is carried well back, is about forty draws per minute, and a cast for every two yards of stream fished is the allowance which, on the whole, will generally be found the most advantageous. The bait should not be taken out of the water until brought close up to the bank, or side of the boat, as it is not at all an uncommon circumstance for a fish, which has perhaps been following it all the way across, to make a dash at it at the last moment, when he appears to be about to lose it." The moment a run is felt, strike hard, and, if possible, down stream, or in an opposite direction to that in which the fish is moving: if this cannot well be done, strike upwards, and be prepared to shorten the line if the fish should rush towards you. Keep a firm even strain on him from the moment he is hooked, and land him without delay.

Mr. Francis's latest form of spinning-tackle dispenses with the flying triangles mentioned above; and as the same kind of tackle is applicable for trout as well as pike, a description of it is given under "Spinning for Trout."

Sect. 11.—Eel-Fishing.

The Apparatus used for taking eels is exceedingly various, almost every kind of hook being occasionally adopted. Some of the different modes and tackle have been already described, such as the ledger-line (under Barbel-fishing) the ordinary float-angling, &c. These may be used with eel-hooks and strong tackle; and the eel should be landed as quickly as possible after he is hooked, or he will coil himself to the first available fixed object, and set at defiance for a long time all efforts to dislodge him. Under such circumstances there is nothing to be done but to keep up a strong, steady, and persistent strain until he is tired out.

Bobbing for Eels is practised with a common darning-needle and worsted, several lengths of which are strung with worms, and then, after being gathered into loops, so as to form a bunch or "clod," they are attached to a strong line, several yards long, which passes through a piece of lead, of about a pound in weight, that serves as a sinker, and is prevented by a knot in the cord from slipping down closer to the worms than eight or ten inches. The line is tied on to any convenient pole, and the clod having been dropped into the river (at the season when the eels are migrating), the fisherman waits till he feels a bite; he then lifts the clod steadily out of the water, with the eel suspended thereto, its teeth having become entangled in the strands of the worsted; a pail of water being in readiness, the eel is shaken into it, and the worms are dropped into the river to repeat the process.

Sniggling is another method of taking eels by means of worm and darning-needle. The end of a stout whipcord line is whipped on from the eye to the centre of the needle, so that it will hang crosswise to the line, and the rest of the apparatus consists of a hazel rod bent at the top to the requisite curve or angle, or one made on purpose with flexible wire or jointed tops. The needle is baited with a large lob-worm, the eye end being passed in at the head of the worm, and run down it till the whole of the needle is covered except the point; this point is lightly fixed in a cleft made at the extremity of the rod, and the tail of the worm remains free at the other end of the needle. In this way the worm is presented to the eel, and is conducted into his hole or haunt by the bent end of the rod. The curve permits of its being guided round stumps and stones, into holes and crevices, and when it is gently insinuated as far as it will go in a suitable opening

it is quietly left there. The line attached to the needle is held in the left hand, and as soon as the fish seizes the bait and has drawn the needle out of the cleft, the line is slackened, and the rod gently withdrawn; sufficient time having been allowed for the eel to swallow the worm, the fisherman strikes, and thus pulling the needle by the centre, fixes it crosswise in the throat of the eel; some little while is allowed for him to exhaust himself, and then the fish is pulled out.

There are many other ways of taking eels, as by night-lines, eel-spears, basket and other traps, &c.; but these cannot be considered angling in any sense, and are as much beyond the scope of this work as the use of nets and other means of taking fish as a trade.

Sect. 12.—Bottom-Fishing for Common-Trout, Lake-Trout, and Sea-Trout.

The Bottom-Rod for trouting should be similar to that described as the rod for pike-fishing (see page 334), but used with a longer top-joint; or a bamboo rod fourteen or fifteen feet long may be substituted; and a still lighter cane rod will suffice for small brook-trout fishing. An ordinary Trouting Reel and Line of fine eight-plait silk will be required; and the casting line should have five or six lengths of good single gut, slightly stained with brown or brownish-green by means of common black or green tea, and knotted together without whipping. The Hook for worm-fishing should, for good-sized river trout, be No. 3 or 4 if fishing with a single hook, and No. 5 or 6 where the fish run small; but the three-hook tackle made popular by the late Mr. Stewart, author of the "Practical Angler," is found to be much more killing than the old-fashioned single hook. It consists of several small fly-hooks (say No. 10 or 11) whipped on to the same piece of gut at slight intervals, so that the bend of each hook shall be clear of the top of the shank of that below it, and the centre hook is whipped on with its back to those above and below it, so that the barb points in an opposite direction. When the hook is intended for the worm it is best whipped on to the gut with crimson silk, as the dark silk usually employed alters the colour of the transparent worm. Shot, or lead in some form, is commonly required in order to sink the bait, its weight depending upon the strength of the current. Thin lead coiled round the gut is better than shot nipped on, as the latter are apt to bruise and weaken the gut. A Float will sometimes be needful, and may be either of cork or swan-quill, the latter being generally preferred.

The Baits for Trout used in bottom fishing are chiefly worms and minnows, the latter either natural or artificial; but caddies, caterpillars, and gentles, are in some localities much prized. The worms which are the best for trout-fishing are the marsh-worm, the button-worm, and the brandling; the last being chiefly adapted to the smaller sizes of fish. They should be well scoured, and applied as follows:—Six or eight dozen worms will, in all probability, be required in a good day's fishing, and should be carried in some damp moss in an appropriate bait-box or canvas-bag; and a little bag of sand in which to dip the worm before baiting will enable the angler to hold it better, and thereby facilitate his placing it on the hook. In putting on the worms, take the hook between the finger and thumb of the other hand, insert the point of the hook in at the head of the worm, and run it along its body until the whole of the hook is concealed, and also a very short portion of the gut; care should be taken not to let the hook penetrate the side of the worm. If the worm is too small thus to cover the hook, and also leave a portion an inch long hanging from the end, two may be applied; and if on the other hand it is too long, the barb may be brought through and re-entered an inch or so lower down, so as to pucker-up a coil of the worm's length, which adds to its allurement, and at the same time prevents too long a portion from hanging free. In the tackle devised by Mr. Stewart the worm is not threaded on, but hooked through in several places. Sometimes as many as four hooks are used, but generally three will be found quite sufficient, or only two may be employed; and whatever the number, the alternate hooks should point in contrary directions. The advantages of this method are, that very few hooked fish are lost, whereas with a single large hook many pricked fish escape; secondly, that the

worm is more easily put on; and thirdly, that it lives much longer. If not roughly used in the water, a worm will last a considerable time; but it should be examined every now and than to see that it is not broken. Grubs, caterpillars, and gentles, are applied two or three at a time on the hook—first one lengthwise, then one obliquely so as to leave each end free, and finally lengthwise to conceal the barb.

THE ARTIFICIAL MINNOW, in all its varieties, may be tried, and in some rivers and states of water will do great execution. In none, however, will it take equally well with a good and well-baited real minnow; and if this can be obtained, it is useless to attempt to take fish with an inferior article.

THE COMMON TROUT is found in almost all the clear, gravelly, and quick-running streams throughout the three kingdoms, and sometimes, though not in the same perfection, in streams of an opposite character. Trout spawn in the autumn, the exact time varying in different localities; and they come into season in the spring, when also their time of perfection will be early or late, in accordance with the nature of their habitat. A low temperature seems rather to accelerate than retard their condition; and many of the Scotch streams are much earlier than those of the southern and western parts of the island. For bottom fishing, the deeper and stiller parts of the stream answer better than the very rough freshes, though even for this kind of fishing perfectly still water is not so well calculated as that rate of stream which will move the bait without destroying its form or texture. The great lake-trout is met with in a few of the large lakes in Scotland and Ireland, while the sea-trout are common in most salmon-rivers.

THE VARIOUS MODES OF TAKING TROUT will be now entered upon. First, fishing with the worm is practised by obtaining the apparatus and bait described in the previous page; the angler then, with his wading-boots on, if he uses them, quietly wades into a part of the river which will command an extensive sweep of likely water; or, if preferring *terra firma*, he keeps as much as possible out of sight of the fish upon a part of the bank suitable for his purpose, and below the water to be fished. It must be known that the worm should in all cases be cast up-stream, and suffered to float down again, for reasons which will be clear enough when explained as follows:—First, the trout always lie head up-stream, and therefore do not see the angler so well below them as above; secondly, the bait floats gently down without injury, which must be done to it if dragged against stream; thirdly, in hooking the fish, the barb is much more likely to lay hold in this way than if the line is struck in the opposite direction; and fourthly, the water is not disturbed by the wader till it has been already fished. The angler swings or casts his worm as far up-stream as he can, using as long a line as he can easily manage, and no more, and suffering it to float down with the stream till within a short distance of the place where he is standing, when it should be lifted and re-cast. When a fish is felt to bite or lay hold of the worm, wait a few seconds till he has done nibbling, and the moment he is running off with it, strike smartly but tenderly with the wrist, not with the whole power of the arm, and proceed to land your fish with as little delay as possible.

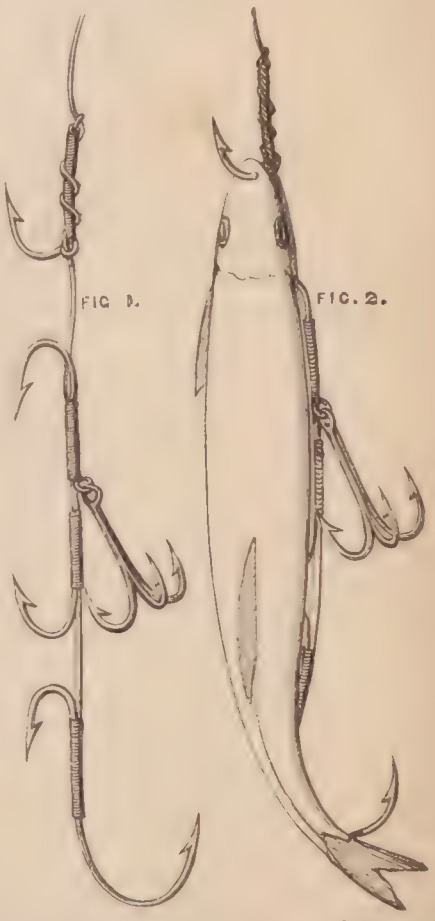
GRUBS, CATERPILLARS, GENTLES, &c., are all used in the same way, and will serve the angler well in most localities, but as a general bait for trout they are not equal to the worm.

THE LIVE MINNOW may be used in the same manner as in snap-fishing for pike, described in p. 336, but it is not so well adapted for trout-fishing as for perch or pike, except in those rivers whose current is comparatively slow, and which are nevertheless the haunts of large trout—as, for instance, the Thames, the Severn, the Warwickshire Avon, &c. Many anglers, moreover, have a strong aversion to the employment of live-bait for trout, and condemn it as unsportsmanlike.

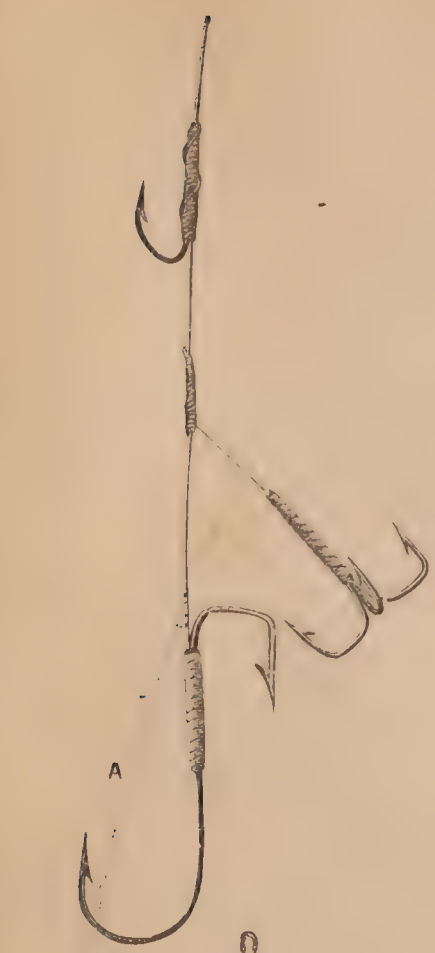
SPINNING FOR TROUT may be practised with either of the methods of using the dead minnow described in p. 315, or with the spinning-flights used for pike, according to the instructions given in p. 338, the tackle being duly reduced in size, and single gut used instead of gimp. The annexed engraving (No. 1) shows the size of flight most suitable for trout on the Thames, where small gudgeon and bleak are the baits most commonly employed. It will be observed that there is an additional loose

flying triangle indicated by dotted lines. The use of this is thus described by Mr. Pennell :—"Unlike jack, trout are very frequently in the habit of 'taking short,' as the puntsmen phrase it — that is, seizing the bait by the tail instead of by the head, or from laziness or shyness making their dash a little behind rather than before it. In order to meet this peculiarity, and to render the killing powers of the above flight as deadly in the case of trout as they are in that of the pike, I use for trout-spinning an additional flying triangle, tied on to a separate link of twisted gut (No. 2), which can at pleasure be attached to or disengaged from the ordinary flight by being passed over the tail-hook from the point. This triangle flies loose from the bait in the position indicated by the dotted outline (A), and will be found to act as a powerful argument against any sudden change of mind or loss of appetite on the part of a pursuing trout. The size of the hooks, length of gut, &c., shown in the engraving, are of the proper proportions for a flight of size No. 1. They should be enlarged or diminished as flights of a larger or smaller size are used. Elasticity or stiffness is absolutely essential to the proper action of this tail triangle, and therefore the only material of which the link should be or can be made, if it is to be of any use, is twisted or plaited gut—twisted being the better of the two." The method of casting, working the bait, &c., is, in open waters, identical with that described for pike-spinning; but in the case of rivers, &c., which are generally the best places, no rules can be laid down, and a few lessons from an experienced spinner would be of more advantage than any amount of reading.

It was stated at the end of the particulars relative to pike-fishing in page 339, that Mr. Francis Francis's spinning-tackle differed in several respects from that there described. Believing that in most tackles the hooks lie too close to the bait to get a good hold, as they frequently hit on the jawbone of the fish instead of catching the more fleshy parts of the mouth, he has adopted the use of a triangle of hooks formed upon a single shank, which ends in a loop or eye, and stands out free from the side of the bait. Since this first appeared in his "Book of Angling," he has modified it by having the triangle eyed into a fourth hook, which is whipped on to the gut as a reverse hook, and he has thus described its advantages in a letter in *The Field* :—"The adaptation of the eyed triangle to spinning-tackle I am quite satisfied is one of the best that has ever been made, as, when loose in this way, the hooks stand much further out from the bait than when one of them is buried in the fish, so that you cannot well miss hooking, and the odds are that you take a very much better hold, because the catch of the hook-points will probably lie below the jawbone. The hooks are not fixed, as they are in the ordinary way, but, yielding to every turn and motion of the fish, cannot work out. In the

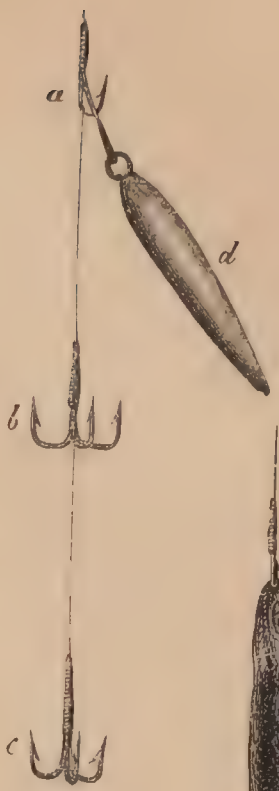


accompanying cut, *fig.* 1 shows the tackle, and *fig.* 2 the application of it. The eyed hook is, it will be seen, eyed into a single hook, which is used as a reverse hook, and plays a most important part in the tackle, as I shall explain presently. The tail-hook (consisting of a tail-hook and reverse hook in one piece) is not different from that which



N° 1.

N° 2.



N° 3.

N° 4.

TROUT-SPINNING TACKLE.

has for some time been in use, save that it is large, so as to take in a good hold and sweep of the tail for the crook, and not too long in the shank, so as to be in the way and inconvenient. To bait the tackle, insert the large tail-hook well up the side of the fish—far enough up to hide as much as possible of the shank under the skin; and, having done this, insert the reverse part of the hook, so as to maintain a sufficient crook of the tail. When this is done properly, no great deal of the tail-hook is visible, save the point and back and the bend of the reverse hook. Next comes a single hook, which is simply a hook to hold the bait, and to keep the gut or gimp close to the side and straight. Then, keeping the gut or gimp tight and straight, put in the reverse eyed-hook appertaining to the triangle. When this is in, it will be seen that the bait from head to shoulder is kept so that it cannot give. In using the old tackles, of whatever form, the great difficulty—more especially for the young hand—has always been to get them to spin not only well, but very well. The bait is very liable soon to get out of spinning; and the more you pull out and re-insert the triangles the worse it often spins. The moment the hooks get loose at all, the bait gets play and can bend, and the spinning then becomes very much a matter of chance. With my tackle the hold cannot give—the fish cannot buckle or bend; but if properly put on, it spins hour after hour without the slightest need for a change; and when baits are scarce, as in trout-fishing, that is a great advantage."

With regard to minnow-spinning for trout in brooks and small streams, Mr. Pennell recommends the tackle No. 3 on the illustration facing p. 341 as being more simple and effective than any he has ever tried. "In this figure, *a* represents the lip-hook (whipped to the main link and not movable); *b*, a fixed triangle, one hook of which is to be fastened through the back of the minnow; *c*, a flying triangle hanging loose below its tail; *d*, a lead or sinker, whipped on to the shank of the lip-hook, and lying in the belly of the minnow when baited. Having killed the minnow, push the lead well down into its belly; then pass the lip-hook through both its lips, the upper lip first, and lastly insert one hook of the triangle (*b*) through its back just below the back-fin, so as to crook or bend the body sufficiently to produce a brilliant spin. *Fig.* No. 4 shows the position of the hooks, &c. when baited." The chief objection to this tackle is that it has a tendency to wear out the bait very rapidly. Mr. Francis prefers for small trout a tackle consisting of a large hook to pass through the body of the minnow, with a lip-hook and a triangle; one hook of which is to be fixed in the shoulder of the bait: it is more killing than the two-hook tackle described in page 315, and dispenses with the double strand of gut and the leaden cap, which are so objectionable in the tackle with which Colonel Hawker's name is associated. This tackle of Mr. Francis's much resembles the No. 1 seen in the illustration of Mr. Pennell's trout-spinning tackle already given (page 342), except that besides being proportionately smaller, the reversed portion of the tail-hook is dispensed with, and the lip-hook and triangle are whipped on at the same point, the triangle hanging over the bend of the large hook and the lip-hook on the opposite side of the gut. The bait is put on as follows:—The point of the large hook is inserted in the mouth of the minnow and worked downwards as close as possible to the spine until it comes out at the root of the tail, where the barb is left exposed; and the extremity of the fish, being bent round to the form of the hook, has the curve necessary for spinning. One hook of the triangle is inserted in the shoulder of the bait on whichever side it may spin best.

When fishing with the minnow, well leaded and in deep water, the angler seldom sees the trout rush at his bait, but is warned by the sense of touch rather than by his eyes that the trout is at it. At this moment the angler slackens his line gently for a couple of seconds, and then strikes with his wrist, using only a slight jerk. The trout is now either hooked or alarmed, but generally the former is the case, unless he is a very shy wary old fox; in which case he is not likely to be again tempted on that day. If, however, the trout is seen approaching the minnow, the angler ought to endeavour, as far as his nerves will allow him, to continue the precise kind of motion which attracted the fish, until he not

only *sees* him at the bait, but *feels* his pull, when he should proceed exactly as if all were out of sight. This, however, is a difficult task, and few young fishermen have sufficient command over themselves to avoid the mistake to which their attention is here directed. Everyone who has hooked fish of any size with fine tackle must be aware how difficult it is, when commencing trout-fishing, to carry out in practice the theory which he has been endeavouring to realize for some time past; and each, in his turn, must have been made painfully conscious of the danger, not only of striking too soon and too hard, but of attempting to land a large fish with fine gut before it is tired out. My own early recollections satisfy me on this point; and I remember on one occasion losing a trout of at least five pounds weight through excess of anxiety to land him rapidly and triumphantly, although, theoretically, I was fully aware of the folly of my proceedings. All of us, I have no doubt, could tell the same tale; and so it must ever be. Nothing but practice can give that steadiness of nerve and presence of mind which will enable the sportsman to do the right thing at the right time.

In bringing the minnow home to recast, if the angler is on the bank, he should be very careful to lift it from the water slowly and quietly, as it is very often at that moment that the trout seizes it. Whether he fancies that the bait is a live minnow leaping out of the water, or whether the value of the thing is increased by the prospect of losing it, cannot of course be surely known, but it is certain that at this moment many large trout which have cautiously followed the bait all through the cast, are at last tempted to rush at it, and may then be taken if the above precaution is adopted: whilst on the other hand, they are assuredly scared if the bait is carelessly drawn out of the water.

Trolling for the Great Lake-Trout is often practised in the Scotch lakes. For this purpose two strong and long trolling-rods are required, with lines of at least eighty yards of strong twisted silk, or good hand-made hair line. This kind of fishing must be carried on from a boat suited to the state of the lake, which, if liable to strong currents or winds, will require it to be of full size and seaworthy. This is rowed out into the lake by a couple of men, who manage it and impel it in the direction and at the rate of speed indicated by the angler, or by some experienced hand, if he is young or a stranger to the locality. Very strong swivel-traces will be required, with the double swivels, and either strong gimp or treble-gut must be used for the hook-length; but if the latter, it also must be guarded with brass wire, as these fish are very apt to bite through anything which is capable of being easily cut or divided. The parr-tail form of hooks may be used with one of the rods, and baited with a small trout; on the other may be used, by way of variety, any of the forms of hooks described for pike-fishing. The traces should be heavily leaded with rolled leed or swan-shot, as, from the great length of line that is let out, much more weight is required to sink the bait; but the quantity of lead must be regulated by the depth at which you troll, as in shallow water more line and less weight are required than when fishing deep; and however deep the water, the bait should sink to within about half-a-dozen feet of the bottom. A constant look-out should, however, be kept, to prevent the tackle getting foul of weeds, &c. In the daytime the deepest parts of the lake should be fished; but the best time is in the evening, from an hour or two before to an hour or two after dusk, and then the shallower water round the edges of the lake should be gone over.

On the boat being rowed a short distance from the shore, the angler drops from the stern one of his baits, and, as the boat moves along, allows the line to run out about thirty yards, when it is stopped by some kind of hitch, such as a slip-knot or any other device, and the rod is fixed over the side of the stern at an angle of thirty or forty degrees. The other rod is then set in the same way, and the boat steadily kept going at about two miles an hour if the water is clear and bright, and more slowly if discoloured. The line ought to be free, or so nearly so as to barely withstand the force of the boat moving through the water; if therefore a slip-knot is used, see that it is a very free one. A stone is sometimes employed, placed in the bottom of the boat, or a piece of cobbler's-wax

on the butt-end of the rod to which the line is attached by the thumb, and from which it is easily torn by the pull of the fish. When a large trout is hooked, the boat should be rowed to the shore, and the fish landed with the landing-net or gaff.

ARTIFICIAL MINNOWS, spoon-baits, &c., are used for the common-trout or lake-trout, exactly as in fishing with the real baits for which they are substituted, except that the striking must be quicker, so as to prevent the trout from detecting his error, and thus leaving the bait before he is hooked.

SECT. 13.—SALMON-FISHING WITH THE WORM OR FISH-BAIT.

THE MOST SIMPLE KIND OF TACKLE used in bottom-fishing for salmon is that employed when the worm is used. For this purpose a single hook (No. 1 or 2) is whipped to a length of strong single salmon-gut, which should extend at least five or six feet, and then be joined through the intervention of a swivel-hook to the casting-line. The reel should be a large-barrelled check-winch, holding from sixty to eighty yards of good plait line. About two feet from the hook five or six swan-shot are to be applied, or a piece of roll-lead if the stream is very strong; since the tendency of rapid currents always is to cast *up* all objects thrown into the water, and therefore the increased weight is required to counteract this power. Sometimes two hooks are used in worm-fishing for salmon (Nos. 1 and 4); the first is tied on below and the latter a little above its shank; or a Stewart worm-tackle might be made on a larger scale than that described for trout, page 340. The rod for this kind of fishing is the ordinary trolling-rod, with the substitution of a more elastic top for that required to manœuvre the bait in minnow-spinning.

THE SPINNING-TACKLE for salmon is similar to that used for large trout or pike, the only difference being that it requires to be of full size, and to have a greater weight of lead to sink it to the bottom, where the salmon always feeds when in search of fish or worms.

THE MODE OF BAITING the single hook with the worm is to take two or three lob-worms, or marsh-worms, and run the point of the hook through an inch of one of them near the head; then omit about an inch and a quarter and insert the hook again through another inch; after which a second worm is to be served in the same way, and if they are not of good size, a third—always finishing by leaving the point and barb within the body of the lowest worm, and about two inches from the point of its tail. In this way the worms lie in four or six loops on the hook, with their heads and tails free, and they are killing in proportion as they are constantly moving in their struggles to free themselves from the hook. In baiting the double hook, the lower one is entered at the head of the worm and brought out at the tail; the worm is then drawn over the point of the upper hook by bending the gut, and it is stretched up to the shank as well as partially over the gut, in which process the point appears projecting from the middle of the worm. Next, transfix another worm with the lower hook, and then impale one half of it upon the upper hook so as to conceal it, leaving the lower half of the worm free; finally, conceal the bend and barb of the lower hook with a third worm.

MINNOWS, &c., are applied to the hook exactly in the same way as in trout-fishing, remembering always that the bait should be of a larger size, in order to tempt the salmon, and that as the baits are larger, so the hooks must correspond in dimensions, in order to carry them properly. ARTIFICIAL FISH-BAITS are used also for salmon similar to those for trout, but larger.

SALMON ARE CHIEFLY TAKEN with the worm or minnow from the beginning of March to the middle of June, but sometimes even in the autumn they may be tempted with the worm or fish-bait. Still water—that is to say, water comparatively still—is the best fitted for bottom-fishing; and in such situations they often take the fish-bait or worm in preference to the fly. It often happens in severe spring-frosts, when the water is clear but of a cold uninviting green colour, that the salmon will take the minnow freely, and yet refuse the fly *in toto*. But all further rules on this subject are useless, as so much depends upon the variations of the season, that what will suit in one year will fail in an exactly similar condition of water in the following

season. The safe plan, when the salmon are shy, is either to try all baits in succession until the killing one is pitched upon, or to watch others do the same thing, and then to profit by their experience. If, however, the angler is himself trying the various experiments necessary to the final selection, he ought to have a thorough knowledge of the locality, and be able to judge at a glance, from the condition of the river, what humour the salmon are likely to be in. It must be known that a pertinacious use of an unseasonable bait not only destroys all chance of sport with other baits on that day, but disgusts the fish with that particular kind of lure for many days to come. Hence this practice is a dangerous weapon in the hands of the tyro, and, though very successful with the experienced hand, is capable of doing great mischief if abused. This is more especially the case with the worm, which requires the water to be exactly in one particular state for its successful employment; and if used at any other time will disgust the fish for a long period. Hence, it is essential to its use that the water shall be just low and clear enough to allow the bait to be seen, and yet that the stream shall be sufficient to carry the worm down at a certain distance from the bed. The fly may be used to any extent, and will not interfere with bottom-fishing; but if the worm has been often exhibited to the salmon, it is useless to repeat the offer for some time to come.

The Mode of Worm-Fishing for salmon is as follows:—Let out about twenty feet of line, and attach the worm in one or other of the modes already described. Then let the fisher take his stand on the bank, and draw out a yard and a half of the line from the reel, letting it hang loosely from the butt-end of the rod, so as to offer no impediment to the salmon when it seizes the bait. He then casts his worm well across the water, directing it slightly downwards; the current immediately seizes hold of it, and sweeps it onwards with a tendency towards his own side, and in this sweep the salmon takes it, if so inclined. When it reaches the side of the river on which the angler stands, he must lift it gradually from the water, but without jerking it, and repeat his cast, slightly varying the direction. If during this procedure the fisher experiences any pull, whether decidedly from a fish or from any other cause, he should give out line until he finds some very decided pull upon it, such as to leave no doubt upon his mind that the salmon has bolted the bait, when a very slight elevation of the wrist will strike the hook or hooks into the throat of the salmon, and the angler has only to proceed according to the size of the fish in order to effect his capture. Of course with the strong tackle used in worm-fishing less danger is incurred of losing him than with the fly; but still with large and vigorous fish some care is necessary, and the butt-end of the rod must be advanced pretty constantly, and for some little time, before the gaff or landing-net can safely be called into requisition.

In using the Spinning-Tackle with minnow or troutling as bait, it is spun exactly as for trout; but as the leads are heavier, there is more danger of its fouling the bottom; and if so, the angler must do as a coachman does when his whip is fast in a buckle or trace—that is to say, he must by a rapid throw of the rod suddenly slacken his line and jerk the bait away from him. This often succeeds; but if it fails, recourse must be had to a long forked stick, or the clearing-ring or drag-hook (see page 327), by which a greater part, if not all of the line may be saved; and as the loss of a part is better than the whole, so the loss of the hook will be borne better than that of the whole of the tackle.

Sect. 14.—Grayling Bottom-Fishing.

The Tackle for Grayling must be of the finest description; and most grayling-fishers prefer a single-hair casting line on that account. This or a single-gut length of six or seven feet, with a swan-quill float and a fine hook of No. 6, 7, or 8, will complete the equipment for this species of sport—that is to say, in conjunction with a rod of sixteen or seventeen feet in length, and a reel and reel-line of such dimensions as to afford about twenty-five or thirty yards of available line. Three or four No. 2 shot will generally be wanted, or if gentles are used, No. 4 or 5 will be heavy enough for the purpose.

THE BEST BAITS for grayling are the gentle, the caddis-worm, and the brandling, or the red-worm. The various grubs are also employed with success in grayling-fishing; indeed, all the small larvæ will take this fish, but none are better than the gentle and the caddis-worm. GROUND-BAITING may be practised, but not too profusely, as this fish is more easily satiated than some others in which ground-baiting is employed; and it is also less discriminating, so that it will take unscoured ground-bait as readily as the well-scoured bait on the hook. The minnow is not often taken by the grayling, but occasionally it has been used with success; still, the grayling-fisher will waste time by endeavouring to capture the fish with any natural bottom-lure but those which I have specified above.

GRAYLING ARE IN SEASON in the autumn, coming in just as the trout go out. They spawn in April and May, and come round so as to be edible by the end of July; but they are not in their best condition until November. They are found in clear gravelly streams, as well as those which are loaded with mud, such as the Wye in the lower part of its course; but in the latter kind of river they are not so fine and beautifully coloured as in the pellucid and gravelly bed of the Teme, and the upper course of the Severn, as well as in the Wye above Hereford. Unlike the trout, they are not spread over the three kingdoms, but are confined to about twenty or five-and-twenty rivers, including, chiefly, the Wye, Usk, Lugg, Teme, Severn, Test, Avon, Derwent, Dove, Trent, Ure, Swale, &c. Of late years, however, the grayling has been introduced into several other rivers in Hampshire, and some tributaries of the Thames, also into the Clyde and elsewhere in Scotland.

THE GRAYLING is taken either by simple float-angling (the angler striking pretty quickly, but gently), or by dipping, or sinking and drawing. The depth at which the bait is to lie varies much, but in general, during the first part of the season, these fish feed near the surface, and later on nearer the bottom. All sorts of natural flies and grasshoppers may be used successfully as dippers, and the artificial fly also; but as this will be hereafter treated of under the head of Fly-fishing, it will be unnecessary to allude more fully to this mode in the present chapter. The artificial grasshopper (so called, for it really has little or no resemblance to the insect) is a very destructive bait; and its use is found to be so detrimental to fly-fishing, that it is prohibited on some of the best grayling rivers. Grayling play pretty freely at first, but do not fight nearly so strongly as the trout of the same size; hence, even with the single hair, they may generally be landed in twenty minutes, or even less; and the instances in which tackle is broken by this fish, in the hands of a skilful angler, are rare indeed.

CHAPTER IV.

NATURAL AND ARTIFICIAL FLY-FISHING.

SECT. 1.—THE FISH WHICH WILL TAKE THE FLY.

IN the chapter on Bottom-fishing I have remarked, that all fish may be taken by that mode; but now it must be explained that the circle from which the victims of the fly-fisher's art are to be selected is much more limited. He may, however, flatter himself that all, or nearly so, of the most prized varieties are included in his list, and this is the case not only in the British islands, but wherever the *Salmonidæ* are found, for these are the chief source of sport, although fly-fishing is much practised in India, where they do not exist. The following list includes all those fish which will take the fly so freely as to be worth the angler's notice; and I shall describe the particular mode of fishing for them in the order of their value, not only as edible fish, but as affording sport to the angler, beginning with the little playful bleak, and ending with the lordly salmon. They are—first, bleak; secondly, dace; thirdly, roach; fourthly, chub; fifthly,

grayling; sixthly, trout in all its varieties; seventhly, salmon.

Sect. 2.—Varieties of Fly-Fishing.

Natural Fly-Fishing consists in the use of the various living flies, grasshoppers, &c., which are found on the banks of rivers and lakes. It is practised by a process which is called Dipping, but chiefly in such situations as are so much overhung with bushes as to preclude the use of the artificial fly. In these spots the water is generally still, and there is no possibility of offering the lure in any other position than a state of almost entire quiescence. Hence all imitations are easily discoverable; and the real fly and grasshopper, &c., are the only surface baits which the fish will take.

Artificial Fly-Fishing, on the other hand, consists in the use of imitations of these flies, and also of other fancy flies, by means of an elastic rod and fine tackle, and by a process which is called whipping. All fish which will take the one will take the other kind of lure, but not always with an equal degree of avidity, as we shall hereafter find; but as the principle is the same in both cases, it is better to treat of them together, rather than to go over the same ground a second time.

Sect. 3.—The Apparatus Required in Dipping and Whipping.

The Tackle for Dipping is much more simple than that employed in whipping, and it consists of a moderately short and stiff rod (the spinning or trolling-rod, *minus* its butt-joint, answers this purpose well)—of a short but strong reel-line of hair or plaited silk—of a single length, or two at most, of gut—and of a fine hook suited in size to the bait and fish. In dipping, it is usual to lengthen or shorten the line, which is used from a foot in length to two or three yards, by coiling it round the end of the top joint, and, after the rod has been insinuated through the trees or bushes growing on the banks, uncoiling it as the line is wished to be extended. Some anglers use a reel fixed upon the lower part of the second joint, and with a hair-line it acts pretty well; but with a plaited one it is difficult to protrude the line from the end of the rod without so great a degree of disturbance as to alarm the fish. The uncoiling from the end of the rod is not unattended with disadvantage; but it is less objectionable than doing so entirely from the reel, though I think, for the sake of convenience, that appendage may be added, taking care to have the lowest joint free, so as to be able to shorten the rod by that amount at pleasure.

For Whipping, or Fly-Fishing as it is generally called—that is, for the use of the artificial fly—a rod, either single or two-handed, according to circumstances, is required, with a fine reel-line and large barrelled-reel; and also a long casting-line, with one, two, or three droppers, each armed with a fly.

The Fly-Rod is either a single-handed one, or, when used for the larger varieties of the trout or for salmon, the two-handed rod. Both of these rods are usually made of the same materials, and they differ only in size, the single-handed varying from eleven to thirteen feet in length, while the two-handed extends from fourteen to twenty feet. They are both usually made in four or five lengths, but in Scotland they are, I believe, seldom in more than three pieces. The wood generally adopted as best for the fly-rod is greenheart, hickory being the next best; or the butt is made of hickory and the other joints of greenheart—thus saving something in weight, as although hickory is heavy, greenheart is still heavier. Another wood, the "blue mahoe" of Jamaica, has lately been introduced, and is highly spoken of by those who have tried it, being very tough and pliant, yet light and sufficiently stiff; and a still more recent candidate for public favour is "washaba" wood, of which rods have been made by Messrs. Jack of Glasgow. At present, however, these woods have not received such an extended trial as will show whether they will displace their older competitors. Fly-rods are also commonly made of hollow cane, with ash-butts; or with the centre joint of hickory and top joint of lancewood, sometimes spliced with cane. Some of the lightest fly-rods are made, except the butt end, of rent and glued bamboo; but they are very fragile in careless hands, and scarcely fitted for the young angler.

Nothing in the whole range of the manufacture of fishing-tackle requires greater skill than the putting together

of a good fly-rod; for it must possess great pliancy and strength, and yet it must balance exactly in the hand, and *yield equally in every part.* This last quality is essential to the due management of the fly, for without it it is impossible, except by long use of the same rod, to do full justice to the art which is under consideration. The portions of the rod are united together either by means of splices, or in the same way as the bottom-fishing rod, by means of brass ferrules; but, in addition to the ferrule, a small pin, or a flat hook of doubled and bent wire, is commonly fixed close to the socket and head of each piece, and, after the latter is passed into the former, these pins are united by a few turns of waxed silk, in the form of a figure of 8, so as to prevent the force exerted in throwing the fly from separating the rod into two or more portions. On finishing the day's fishing these may be cut away or retained, at the discretion of the fisher, who will sometimes prefer keeping his rod together from day to day, to the trouble of repeating this operation on each visit to the river. About from ten to fourteen good-sized rings should be fixed on that side of the rod on which the reel is used, whichever that may be; and they may be applied by means of a piece of quill and a few turns of waxed silk above and below the ring. At the butt-end a SPIKE, which is capable of being withdrawn like a toothpick into its case, is exceedingly useful; and as its weight serves to balance the outward length of the rod, it is rather advantageous than otherwise. It is moreover so useful in fixing the rod, while recovering the fly when entangled, that I should strongly advise the young angler to adopt it, or to have with him a screw-spike capable of being attached whenever that unpleasant occurrence takes place.

THE REEL is either simple, with a large drum or central barrel, or otherwise. The multiplier is made with a series of wheels, which are intended to give out and take in the line more rapidly than the simple machine. In this desirable point I am satisfied that the object is attained much more completely by the simple large drum; for though the multiplier is very pretty in theory, yet it is constantly failing in practice. A large barrelled reel, with check to regulate the giving out of the line, is far preferable. Upon this reel is wound from thirty to eighty yards of line, varying with the rod and the fish for which it is to be used; thus, the smaller fish, including the ordinary run of common trout and the grayling, will require only thirty or thirty-five yards, while the larger varieties of trout and the salmon should always have from sixty to eighty yards ready for their capture.

THE HAIR-LINE, as made by the hand, I have already described (page 308) and I believe this, if well made by a careful yet handy man, will be superior to those usually sold in the shops and made by the machine. It should be regularly tapered, and should vary in strength from twenty-four hairs down to fourteen for salmon, and from eighteen down to ten or twelve for trout. The tapering portion, however, should only extend, in the trout-line, as far as it is clear of the reel, which may be estimated at about half the length of the line; and in the salmon line only for about twenty yards from the end. Plaited silk lines are now mostly used, especially for salmon, but I confess I have never seen any line which could be thrown with as much certainty as the hand-made horse-hair line. It has just sufficient stiffness to carry itself smoothly through the air, with pliancy enough to adapt itself to all the varying evolutions of the angler's wrists and arms. Nevertheless, I am aware that many good anglers give the preference to the plaited line, and it is no doubt very superior to the old machine-twisted article, which was constantly "kinking," and from that circumstance liable to break. There is, however, some difficulty in buying a really good horse-hair line, whereas an excellent plait line of either silk or cotton can readily be obtained.

THE CASTING-LINE is composed of two, and sometimes of three portions; the first, or extreme portion, consisting, in all cases, of several lengths of single-gut carefully knotted together, with or without silk "lapping;" the next portion is usually of treble-gut, twisted by the machine, or by the quills and bobbins which I have described at page 308. To these some anglers add a third portion of twisted hair, which however is unnecessary if the reel-line is properly tapered, and is of hair also. The great principle to

be carried out is to taper the line from the point of the rod to the end, so that in working it through the air it shall play smoothly, and obey the hand to the greatest nicety. In this respect it should imitate the four-in-hand whip, which is so graduated that it tapers all the way, and is hence capable of taking a fly off the leader's ear. The gut varies in strength and size, from that required for the salmon to the finer sizes used in grayling or small trout fishing. The single-gut portion is generally about two yards long, and terminates in a fly which is called the stretcher, and which is either dressed on a length of gut, or has a fine loop left at its head by which it may be attached to any fresh length of gut. About three or four feet from this stretcher another fly, called a dropper, is attached by means of a short length of gut, usually about three or four inches long; and at the junction of the single gut with the twisted portion there is another dropper, with a somewhat longer length of gut. If more than two droppers are used, the single gut length is increased to eight feet, and the third dropper is then introduced midway between the two already described, with a length of gut of about six inches, while that of the highest is increased to eight; by which gradual increase of length the stretcher and the droppers all ought to touch the water at the same time, while the foot-length of the casting-line extends in a gentle sweep from the stretcher to the point of the rod. The mode of attaching these droppers to the casting-line is by opening the water-knots, and then introducing the dropper-gut between their two portions, after having previously knotted its end. This should be done as neatly as possible, to avoid making an unsightly projection. Most anglers whip the ends of the water-knots with white silk waxed with white wax, and also take a few turns round the dropper-gut to make all secure.

Artificial Flies have been already fully described in the second chapter.

Sect. 4.—Bleak-Fishing, and General Directions for Throwing the Fly.

Whipping for Bleak forms the best introduction to the use of the fly-rod, especially as these little fish may be met with on almost all our canals and rivers, and often in situations where there are no trees to interfere with the use of the line. Almost any small midge or gnat may be employed, and the tackle throughout should be of the finest description, with a light rod of about eleven or twelve feet in length. The young angler should now take as much pains in throwing his fly as if he were intent upon the capture of the finest salmon. In watching the evolutions of the general run of fishermen, it is common enough to see two or three feet of line touching the water before the fly, whereas the contrary ought to be the case, and the fly should alight on the water as airily and gently as its natural prototype, with scarcely any portion of the line following its example by coming into contact with the water at all. If the angler will only endeavour to avoid jerking his line, and will coax his fly rather than force it forwards, he will soon see the difference. The cast or throw, called throwing from the left shoulder, is effected as follows, when the rod is light and there is plenty of elbow-room. I am now supposing that the angler has a rod of eleven feet in length, and a line, altogether, of about eighteen, with either a single stretcher, or, in addition, one or two droppers, all very minute. He takes the casting-line in his left hand, at such a distance from the fly that it is quite clear of the ground, and with the rod pointing forward and to the left; then at the moment when he looses the line, he, with a half side and half backward movement of the arm, sweeps the line in a gentle curve till it is well behind and above him. It is at this point that the first mistake is likely to occur, as here the awkward hand generally jerks his fly (which is sometimes even whipped off with a snap), and after this jerk he can never regain that even and smooth flow which would otherwise follow its alteration from the backward to the forward direction. When this movement is elegantly and effectively carried out, the line, without any abrupt change, is brought round the head from the backward to the forward movement without passing directly overhead, but in a line considerably above the level of the head of the angler; when it has passed before the body, it is thrown forward *at the full length of the arm*,

and, without the slightest hurry, to the point which it is intended the fly shall alight upon. If this is badly executed, and with any jerk, the line is doubled upon itself, and the loop thus made touches the water while the fly is two or three feet from its destination, and finally descends with a whole series of convolutions of gut or hair, enough to alarm all the fish within sight.

Throwing from the right shoulder, or back-casting, differs from the foregoing in bringing the rod and arm (after they have achieved the backward movement) forward again by the side of the head, delivering the fly over the right shoulder without making the complete circular sweep behind the body. Sometimes when it is desirable to throw the fly with great delicacy, it is tried by waving the line from right to left over the head, in the form of a figure of 8; but this can only be effectively done with a single fly, as the droppers interfere with the manœuvre too much to allow of its being tried when they are used. The young angler should practise both methods, and should never consider that he has mastered the first great difficulty until he has acquired the power of dropping his fly upon the water tolerably near a given spot by both the above methods, and without its being preceded by any portion of the line, or followed by more than a few inches of it. As soon as he has thus dropped his fly he begins to draw it more or less directly to him, and with a series of jerks, varying a good deal according to the fly and the fish.

In Whipping for Bleak, very little more need be done beyond bringing the fly gently and steadily towards the bank, and then repeating the cast in a fresh direction. When hooked, they may be landed at once, even with a single-hair line. Dipping may be practised with the bleak, using the natural house-fly, or in fact any small fly; but it requires very little art, and I shall therefore postpone the description of this species of fishing until the section treating of Chub-fishing.

Sect. 5.—Roach and Dace.

Dace may be taken with the artificial fly, and afford even better practice than the bleak, since they will take a coarser fly, and the tackle may be somewhat larger in proportion. The line, therefore, having more substance is more easily handled, and the fly may be manœuvred to a much greater nicety. Black and red palmers, or gnats, will generally take dace; and two droppers may be added in almost all cases to the stretcher, the angler varying the fly upon each.

Roach may also be taken with the same flies and tackle, but they do not rise to the fly nearly so well as the dace and bleak.

Dipping may also be used with both of these fish, but they will in general take the artificial fly quite as readily, even in still water.

Sect. 6.—Mode of taking Chub with the Artificial and Natural Fly.

These Fish generally lie under the shade of willows or other trees, and very often are difficult to get at with the artificial fly, which, moreover, they do not at any time take so readily as the natural one. Sometimes, however, good chub may be taken in the middle of the day, while basking on the surface of the water, by means of fine tackle and an artificial humble-bee, or a small red hackle, or an ant-fly, on a No. 6 or 7 hook; but their best time is in the mornings and evenings. When they do take the fly on this fine tackle, they require great care at first, as they fight very hard for a short time; and are, on that account, excellent practice for the embryo salmon-fisher.

In Dipping for Chub, which is the best and most certain mode of bringing them to the basket, the following flies, &c., will be found most useful:—First, the blue-bottle fly (two of which may be put on one hook) is a most killing bait for chub; secondly, hairy caterpillars; thirdly, beetles of all kinds, including cockchafers; fourthly, grasshoppers and humble-bees also are among the most destructive lures; and lastly, the May-fly is a certain killer. All these various natural baits must be used very cautiously, and the angler should make as little noise as possible, and should hide himself behind as large a tree as he can find. The beetle, or other bait, having been applied on the hook so that the barb lies under the division between the wing-cases, the quantity of line necessary, which seldom exceeds two yards, is coiled around the end of the rod, so as to be capable in this state of being protruded quietly through an

opening in the overhanging branches of the trees, whose shade the chub chiefly affects. When the trolling-rod, thus armed, has insinuated itself, and is clear of all obstruction, it may be very gently turned round so as to lengthen the line by unrolling it, and the bait in the most imperceptible manner is suffered to reach the water. If there are water-lilies or other flat leaves floating on the water, a good plan is to drop the beetle on one of them, and then gently draw it off the side into the water, when, if there is a chub near, he generally seizes upon it. But in all cases avoid a splash, and let the armed hook reach the water so gently as to cause scarcely a ripple. When there, it may be very gently jerked in all directions a few inches at a time; avoiding all contact of the line with the water, and imitating the movements on the water of the insects which frequent it. In this way good fish may generally be tempted to their fate, and when hooked, may be played and landed in the same way as with the artificial fly; but as the rod is not so suited to this purpose, owing to its stiffness, and as the line is shorter, the chub must be mastered and landed with the net as soon as possible.

Sect. 7.—Grayling-Fishing.

With the Artificial Fly the grayling affords good sport; and as this fish is in season at a time when salmon and trout are going or gone out, it is highly prized on that account if not for its intrinsic sport-giving powers.

The Flies for Grayling are similar to those for trout, and especially to those used in the autumn. Nos. 1, 2, 3, and 5, of the trouting flies, at pages 321-2, may be used early in the season; and later on, Nos. 7, 8, and 9. Sometimes the artificial May-fly will be taken, but not very commonly, except at a time when the fish are not so fit for the table as in the later months of the year. The winged larva, shown in No. 16 of the list, will also take the grayling; and it may be used with advantage on a stretcher with droppers of Nos. 7 and 8. The trout casting-line should be used, with a rod of about eleven or twelve feet in length; and a reel and reel-line of thirty yards will suffice, as the grayling very rarely exceeds two pounds in weight, and the average in most rivers is not much above one pound.

In Fishing for grayling with the artificial fly, there is not much occasion for concealment, as this fish is very bold, and fearless of the presence of man. When hooked there is little necessity for striking, as the hold on the mouth is not in any case good, and the attempt to improve it by striking often ends in breaking the hook away from its hold. At first plenty of liberty should be given, short however of a slack line; but in a very few minutes the attempt may be made to wind up, and this will seldom be resisted. Grayling do not fight very severely, and are not nearly so violent as the chub; they sometimes, however, are strong enough to break away, because their mouths are so tender and the hooks used so small, on account of the limited size of their jaws as compared with the trout. But the line is seldom in danger, and if the hook is only securely fixed, the landing of its victim is safe enough.

Dipping for Grayling may be practised as for chub, but with flies only, avoiding beetles and grasshoppers. It is not, however, a plan often adopted, since the grayling will generally take the artificial fly better by whipping, than any natural fly by the dipping process.

Sect. 8.—Trout-Fishing.

The Tackle Required for this most beautiful and exciting sport is described in the third section of this chapter, page 348.

The Mode of Using it has also been to a certain extent explained in the next section, at page 350. Some few peculiarities, however, must be alluded to in the following account of fly-fishing for trout, which differs in many respects from all other kinds of sport practised on the waters of this country with the rod and line. Unlike the mere whipping for bleak, which I have dilated upon as forming an excellent introduction to trout-fishing, the latter requires great caution not to scare the fish, either by the too near presence of the angler, or by the awkward manipulation of his line and flies. The management of the two-handed rod will more properly come under salmon and lake-trout fishing, for although it is sometimes employed in fishing for common trout in

large and wide rivers, yet it can scarcely even there be needed, and it certainly loses in delicacy of manipulation much more than it gains in its power of controlling a larger extent of water.

Different men adopt various plans of throwing the fly, but it is of little consequence which mode is followed, so that the angler has only entire command of his rod and line, *and can do what he likes with his flies.* When this perfection of casting is arrived at, the angler may choose whether he will fish upstream or down, but he will soon find out by experience that the wind at his back is advantageous to him, and that he will scarcely succeed in any case in casting his fly in the face of a strong breeze. Beyond this no rule will in all cases apply, and the fly-fisher must use his own discretion, founded in great measure upon practical observation, as to the precise mode in which he will reach and fish particular parts of the water that he believes to be the resort of good trout. Indeed it is useless to attempt instructing the tyro by theoretical lessons in the details of an art in which it is certain that nothing but practice can give any degree of proficiency. This is constantly shown even in the professed fly-fisher of two or three seasons' experience, who throws his fly with all the most approved motions, and is beforehand fully convinced that he is the equal of any angler, from John o' Groat's to the Land's End; but when he sees fish after fish hooked and landed by some older hand following in his wake, and using the very same fly, with perhaps an inferior rod, he is obliged to confess that theory must succumb to delicacy of handling, and that fly-fishing is a practical art, rather than a science attainable in the closet. The various degrees of success mark the difference between the master and the scholar, and show that a life-time may be spent in acquiring the power of deceiving this wary fish, and yet there may be room for improvement; hence it is that so many men of talent have been devotees to the fly-rod, and while they have enjoyed the beauties of nature displayed to them during the prosecution of their sport, they have nevertheless been much more deeply engaged in acquiring the art of fascinating a fish seldom of more than twenty ounces in weight. No one of these men would care for taking trout in any way unaccompanied by difficulty, and attainable without dexterity; but when it is found that by long practice and careful observation a feat can be accomplished which no other means will give, then the man who has mastered the power congratulates himself upon its possession, and is not unnaturally pleased in being enabled to display it by showing what may be done after another's failure. Rivalry is the great zest in sport of all kinds, and the trout taken by an artist, in water which has been well flogged by his inferiors, are thought much more of than those landed where they rise to any bungler's throw.

But to proceed to such a description as may be of some little use to the tyro, I must first observe, that he should confine himself to a single-handed rod with a moderately long line—say, of from fifteen to eighteen feet, which he should at once draw off the reel, and of which he should hold the gut in his hand near the fly. With this he may proceed to fish the river which is the seat of his intended sport, and may walk quietly along its bank, throwing successively over every yard of likely water; but always fishing the water nearest to him, and lengthening or shortening his line according to circumstances, such as the breadth of water, the freedom from trees, &c. He will find that he must not throw straight across the river, neither must he allow the fly or flies to be drawn too near his own bank, or he will not be able to lift them cleverly from the water, so as to get such a clear sweep as will enable him to recast them with precision and delicacy. Hence, instead of fishing the water under his feet, he will throw his flies so as to take the edge next his own bank at the length of his line; and will thus successively throw over all on his side long before his person is seen; and when he brings his flies up to within ten or twelve feet of where he is standing, he may lift them, because he has already well tried that portion of the water.

But besides throwing the fly, there is also great art in STRIKING AND HOOKING the fish exactly at the right time, and with the proper degree of force. When the trout rises at the fly, which may always be seen by the angler, the rod should be raised with a motion upwards of the wrist only, avoiding, as

far as the excitement of the moment will permit, all shoulder or elbow-work, and using just such a degree of wrist-action as may be judged will fasten so sharp an implement as the hook in so soft a substance as the mouth of the trout. Theoretically this may easily be estimated, but practically it will be found that the tyro generally jerks hard enough to strike a blunt hook deep into the jaws of a shark or dolphin. The object of striking at all is to prevent the fish from having time to discover his mistake, the natural consequence of which would be to "blow-out" the fly from his mouth. The fly-fisher, therefore, waits till the moment when the fly is actually within the lips of his victim, and then, with a gentle yet rapid wrist-action, he fixes the hook there. This is much more easily done with a light single-handed rod than with one used by both hands, and hence it is advisable for this reason, as well as on account of the greater facilities in casting with it, to limit the young trout-fisher to its use.

In Playing Trout, much depends on their size; if small, they may be landed immediately, but if above half or three quarters of a pound, according to the fineness of the tackle, and the gameness of the fish of that locality, it is necessary to yield to his powers for a time, and to give him line for running; always taking care not to give him so much liberty as to enable him to reach adjacent weeds, or to rub his nose against the ground, and thus, in either way, get rid of his hook. When tolerably exhausted, by advancing the butt of the rod and so using its flexibility as a safety-spring, the reel may be gradually wound up until the fish is brought near enough to be dropped quietly into the landing-net, after which it may be considered secure. But whoever has charge of the net must keep well out of sight of the hooked fish until he is effectually exhausted, or he will be sure to make fresh struggles, and often to such an extent as to cause his loss. The fly may easily be cut out of the lip with the penknife, and is generally none the worse for the service it has performed.

Good Trout are found in almost all the gravelly and quick-running rivers of Great Britain and Ireland, but they vary much in size and gameness, without which latter quality they are little valued by the fly-fisher. In Scotland they are highly prized, since they afford excellent sport, and are also of good size and flavour.

Sea and Lake Trout, when they take the fly, are to be managed in the same way as salmon, whose size and strength they approach much more nearly than those of the common trout.

Sect. 9.—Salmon-Fishing.

For the Salmon, tackle must be employed of a description much stronger than that used for trout; in principle, however, it is very similar; and a salmon-rod with its line may be compared, in all respects, to a trout-rod and line magnified with a slight power of the microscope.

The Salmon-Rod should be from fourteen to twenty feet in length, and should be made of three or four lengths, at the discretion of the fisher. Greenheart alone, or with hickory butt, is the wood now mostly adopted, but some anglers still adhere to the ash butt, with middle of hickory and top-piece of bamboo. Opinions differ as to the nature of the joints. Many prefer the splice, and submit to the trouble for the sake of the nicer play of the rod and the greater length of line it will cast; sometimes the joints are made to screw together; at others, with the bare wood of one joint dropping into the brazen ferrule terminating its next neighbour; and at others again, by having both ends brazed, so as to oppose brass to brass. In both the latter cases the double-pin, or bent-wire, and silk-fastening, are used, in order to prevent their becoming loose or unattached in the ardour of fishing. The rod should balance pretty evenly at the part where the upper hand grasps it above the reel, which is usually fixed at about eighteen or twenty inches from the butt-end. These essential characteristics, coupled with those already given at pp. 348–9, will suffice for the description of the salmon-rod.

The Reel-Line has also been there described, and is of eighty to a hundred yards in length, with the last twenty only tapered down to little more than half its regular size. To this is appended a casting-line, made on the same plan as the trout-line, but one-third longer in all its parts, and entirely of gut, which should be of the size

called salmon-gut. The FLIES for Salmon are described at page 323. When a dropper is used, it is generally appended at about four feet from the end.

THESE IMPLEMENTS ARE USED on a scale very different from trout-fishing, and, generally speaking, with less delicacy in proportion from the increase of sweep, and the coarseness of the tackle; but in salmon-fishing so much depends upon the extent of water covered in throwing the fly, that no pains should be spared to acquire this power as fully as possible. It must be remembered that in salmon-fishing, unlike trout-fishing, the river is often too broad for any line to reach nearly over all the good casts, and success is here often obtained solely by the power which some men have of sending their fly into parts which their weaker or less expert rivals cannot possibly cover. With the young angler, the first thing to be done is to secure the assistance of some resident guide well acquainted with the haunts of the fish, who will give him confidence, if he does nothing else. Without his aid the angler, if unsuccessful, will wander from point to point, and will be unable to do justice to himself, because he has no confidence that there are fish where he is trying for them. Indeed, even the experienced salmon-fisher is all the better for this assistance, if he is on strange water, as though he may give a shrewd general guess as to the most probable casts for fish, he will often pass over good ones, and select those which are much inferior to his rejected localities. He will also get some information as to the probability of his flies suiting the particular river and time, and generally as to the fitness of his arrangement for that precise spot. This knowledge, once obtained, will serve as long as the river continues in the same state; but if rain, or the reverse, should alter the condition of the water, making it either much lower or much higher than before, the tyro will require additional aid from his quondam friend. This is known to all salmon-fishers, inasmuch as these fish frequent very different parts of the same river in low, and again in a high, state of the water; and the flies will also require considerable modification, according to the change in the elements. There are, however, some general rules which may be of service, though they by no means apply in all cases. Thus, large rivers usually require larger flies than small streams, which latter will more often be successfully fished with a gaudy but comparatively small fly—that is, if the water is not too clear. The fish, generally lying at the bottom, will scarcely be attracted from the depth of a large river by a small fly, whilst, if it is too gaudy, they are scared by its colours when they rise near the surface. Again, in small streams salmon seldom take any fly, except when the water is rather discoloured, and in that state a dusky or dull one is not sufficiently attractive; and when the same condition of water exists in the large rivers a gaudy colour will also be preferred. The size of the fly is of course an index to that of the hook, which is its foundation. Beyond these imperfect hints little aid can be given to the tyro, and he must learn by experience in his own person, or from that of others, the peculiar rules applicable to each locality.

THE CASTING is generally from the left shoulder, backwards; after which the line is steadily and rather slowly brought over the right shoulder, with the rod held in both hands, and its point directed upwards and backwards. It is then brought forwards with an increase in speed and force, when, still accelerating the speed, the angler delivers his fly at the spot upon which he wishes it to alight. This throwing from the left shoulder is chiefly useful where there are low bushes or other impediments near the ground behind the angler, under which circumstances the fly must be kept aloft; but sometimes the reverse is the case, and with impending trees and a bare background, the right shoulder or back-casting will avail much better than the rival mode above alluded to; but it is not so manageable with the two-handed rod as with the light single-handed trout-rod, which may be used with as much certainty and facility as the four-in-hand whip. Mr. Stoddart lays it down as a rule that no man can manage properly, without the aid of the wind, a line more than four times the length of his rod, measuring from its point to the fly, and not including that part within the rings. This is certainly much within what is generally considered the extreme length of a salmon-

throw, and many professed fishers maintain that they can cast nearly twice as far as that length will command. But there is a vast difference between simply throwing a fly and throwing it cleverly and effectually; still I cannot help thinking that Mr. Stoddart has a little understated the power of the salmon rod and line in good hands, when he limits the range to thirty-five yards from the spot where the angler stands. This I should say is about the average length of good fly-fishers, but I should think that some few tall and muscular men, who are also adepts, can command nearly ten yards more, when the air is perfectly still and the situation is favourable to the display of their power and skill. Much must depend upon the tackle, which should be very nicely graduated, and if the cast is intended to be very extensive, one fly only should be used: indeed, in salmon-fishing it is seldom that much good is derived from a dropper in addition to the stretcher.

When a fly is to be thrown in a wide river of rather sluggish current, it may be directed nearly straight across, especially if the opposite bank can be reached, and the fly, after it has touched the water, may be brought back with a circular sweep, keeping the rod low until it is absolutely necessary to raise it in order to bring home the fly, and working it by gentle fits and starts, so as to imitate the movements of a living insect. When, however, there is a considerable stream, the fly may be thrown obliquely downwards, as in trout-fishing, and is then brought back against the stream, and often without that attempt at jerking, which must be made in comparatively still water. In all cases the salmon-fisher should keep as much as possible out of sight; and when he has recourse to wading, he should only enter the water which he has already effectually tried; and when there, he should make no disturbance in it which he can possibly avoid. In this respect, however, salmon are duller and less wary than common trout, or even than sea-trout; but still they are easily scared, and no one should incautiously run risks which are not absolutely required.

The fly is worked very differently from the trout-fly, which must always be on the top of the water to be effectual; whereas the salmon-fly should always be sufficiently under the water to avoid making any ripple as it is drawn towards the thrower, and yet not so deep as to be wholly out of sight. The young angler should not, however, follow his lure too closely with his eye, or he will be apt to strike when the fish rises at it; whereas he should always depend upon the sense of touch before he raises his rod, which is the only motion to be adopted. Sharp striking, as in trout-fishing, is wholly reprehensible; and all that is required is the instinctive stand, which it is impossible to avoid making, against a fish as he seizes the fly to run away with it. Sometimes, however, it is found difficult or even impossible, to tempt salmon into actually seizing the fly; they will rise at it again and again, but from some cause or other refuse to take it into their jaws. In this case it must be changed until one is found to suit their fancy, but the change need not be made until the same fly has been tried two or three times unsuccessfully. Patience and perseverance, with skill and science, will here be required, and will always be served in the long run.

In Playing the salmon, greater art is required than in the corresponding department of trout-fishing; and, in consequence, nearly one-third of all the fish hooked escape before they are landed. This arises generally from imperfect hooking, but often also from defect in the tackle which has escaped the notice of the angler. Besides these causes of danger, there are others depending upon the direction taken by the fish, which cannot always be followed by the angler; either from the depth of the water in large rivers or from mechanical causes in the shape of rocks, woods, &c., where the stream is smaller. When hooked, the first thing to be done is to raise the point of the rod, commonly called "giving the fish the butt," which motion must be carried out with as much power as the fisher considers his tackle will bear; always remembering to give way by releasing the line when the strain is too great for it to bear, and when the fish is resolutely bent upon running. But this exact calculation as to restraining or giving way is sometimes very difficult, especially as the size of the fish is no certain index to his power; nor can the size always be correctly estimated at the first commencement

of the struggle, especially by the tyro at this kind of sport. A lively and fresh-run fish will appear twice as big as he really is, whilst a large but dull one will sometimes deceive his pursuer into the belief that he is weak and powerless, and then in a fit of desperation he will show his real size and capabilities by breaking away with a long line towing astern. Mr. Stoddart's directions for playing the salmon are so good, that I am tempted to quote them in his own words:—"Always in running a fish, keep well up to, or if possible at right angles with, its head. In the event of its taking across the current, instead of stemming or descending it, give the butt without reserve. In the case of a plunge or somerset, slacken line as quickly as possible, but lose no time in recovering it when the danger is over. When fish are plentiful and in the humour to take the fly, it is better to risk the loss of an indifferent-sized individual which you happen to have hooked, than to allow a long range of unfinished water to become disturbed through its capricious movements. In this case stint the line and hold on obdurately, but not beyond the presumed strength of your tackle. During the grilse season there are many portions of water, on the Tweed especially, where it would be absolute folly in the angler were he to humour the fish to its heart's content. A lively nervous grilse may occasion more alarm among its kind than one is aware of, especially if the water be of the transparent hue it generally bears during the summer and autumnal months. In event, however, of the salmon being few, or rising shyly, I would advise that some degree of care and ceremony be taken with what fortune brings to the hook; and that on such occasions more regard be paid to the management of the fish under control than to the non-disturbance of a few yards of stream, where the chances of adding to one's success are at the least extremely doubtful. In these circumstances avoid using undue violence. Should the fish escape, the consciousness of your having done so will only add to the disappointment. There is one precaution particularly to be attended to in respect to a newly-run fish, and that is, immediately on hooking it to use a moderate degree of pressure. The salmon will then brave or stem the current, and direct its course upwards; whereas, on tightening the reins, it will frequently do the reverse, and thus not only may a portion of the water in prospect become disturbed, but there is considerable chance, and in some places an absolute certainty, of the fish, if a large one, making its escape." Baggits generally descend the stream, as a rule, when hooked, and no management will make them leave the current; but as they fight sluggishly, and as their loss is of little consequence, provided they do not run away with a good line, the butt may be shown them pretty early, and with a considerable degree of power.

The Gaff is to be used in the following manner:—When the salmon has been thoroughly exhausted by his efforts to free himself from the hook, in which he has been opposed by the elastic resistance offered by the rod, he is brought near the bank, still keeping the butt-end of the rod well advanced, and the assistant then proceeds to strike the gaff into the shoulder of the fish, or, if he uses the single hook, to insert it into the gill-cover. The latter plan is the least injurious to the beauty of the fish, and in skilful hands will answer every purpose. In all cases, however, the assistant should keep out of sight until the angler is satisfied, by the yielding of the fish, that it is safe for him to approach, for a neglect of this precaution leads to the loss of many a fish. The assistant, or gillie, attempting to strike him before he is spent only makes him desperate; and the efforts to escape, which before this were within bounds and under the control of the angler, are now rendered madly violent. This tries even good tackle too far, and either the hook itself or the gut gives way, or else the hold on the fish actually tears away. Tact and experience are the only safe guides on this delicate point, and without them apparent victory often ends in defeat.

Instead of the gaff the landing-net is much used; and in the south, as well as in Wales, is perhaps more in vogue than the gaff. The only objection is its size; but as both must be carried by a gillie, since neither can be well managed by the angler himself, this is really of little consequence. If, however, the angler is either unable or

unwilling to obtain an assistant, the hook with sliding-stick is the best instrument for the purpose; but even with its aid he must wait until the fish is nearly spent, and must then draw near a low and shelving shore before he can venture to hook him under the gills. Most rivers, however, present these convenient spots at intervals, and the angler should play his fish until he reaches one, let the distance be what it may, if he wishes to run no unnecessary risk. In all cases, when landed, the salmon should at once be knocked on the head, and the hook carefully removed with a penknife.

CHAPTER V.

THE CHIEF RIVERS OF GREAT BRITAIN, AND THE FISH FOUND IN THEM.

Sect. 1.—Salmon Rivers.

Salmon and Sea-Trout are found in all the four divisions of the three kingdoms, but in greatest abundance in Scotland and Ireland. In England, however, many rivers have, since the passing of the Salmon Fishery Act of 1861, been carefully preserved, and endeavours have been made, with more or less success, to restore the salmon by artificial breeding, where it was almost, if not quite, extinct. The task, however, is one of great difficulty, owing to the obstructions caused by mill-weirs, the pollutions from manufactories and the sewage of large towns, and last, but by no means least, the netting in the estuaries; for no sooner has the stock of salmon in a river been increased, than the fishermen at the mouth set to work and net every fish they possibly can, so that those who have gone to the cost and trouble, find the result, in many cases, most disheartening, as they have sown only that others may reap.

In England, the most productive salmon rivers include the Severn, the Dee, the Wye, and the Usk (all of which are partly Welsh, however), the Ribble in Lancashire, the Eden in Cumberland, the Tees and the Tyne, the Hampshire Avon, and the Taw and Torridge in Devon; and there are many others of minor importance.

In Wales, in addition to those mentioned above, are the Towy, the Teify, and the Conway, with some smaller streams.

In Ireland, the Shannon is the chief seat of the sport, and affords perhaps more facilities than any other river in the British Isles. Next to it come the Moy and the Erne, the Bann and the Bush, the Galway, the Suir and Nore, together with the rivers Blackwater and Lee, and the numberless lakes of Killarney, Connemara, &c. Dr. Peard's work, entitled "A Year of Liberty; or, Salmon-fishing in Ireland from February to November," will afford a great deal of information respecting the various localities.

In Scotland the Tweed almost equals the Shannon in size and opportunities for sport; and the angler who intends fishing on it would do well to get Younger's little work, published by Rutherford of Kelso, which describes the various waters and casts on the river. It, however, is so much netted as to be to a certain extent spoiled as a salmon river, and pollutions from manufactories, &c., have of late also tended much to injure it; so that it is obliged to hide its naturally higher head before its more northerly rivals, the Thurso, the Shin, and the Esk. The Tay and its tributaries also are first-rate salmon rivers, 50,000 fish being taken yearly by the net. And among those next in importance are the Dee and the Don, the Findhorn, the Conon, the Spey, the Beauly, and the Deveron. There are numberless smaller rivers throughout Scotland in which salmon are occasionally taken, and in which trout abound, particulars of which will be found in Lyall's "Sportsman's Guide to Scotland," and in Mr. Francis's "By Lake and River," but as my experience of their qualities is very limited, I cannot pretend to offer any observations on their comparative merits or demerits.

Sect. 2.—Common Trout and Grayling Rivers.

In Scotland, Ireland, and Wales, almost every river contains trout in some shape or form, varying from the fine well-formed fish of the best rivers down to the small half-starved ones found in the small rivers which descend from the barren sides of the northern granite mountains. It is, however, quite useless to particularize those which afford the best sport, since their name is legion; and I shall pass on to the English scenes of the rod and fly. These are chiefly the following, commencing with those near London, and proceeding more and more in all directions:—The Thames, which has always been famous for its magnificent trout, has been largely stocked with young fish by the Thames Angling Preservation Society, and trout are now more plentiful in its waters than for many years past; but of course not in the immediate vicinity of the metropolis, and the angler must not expect to get any trout nearer to London than Hampton Court. Many of the tributaries of the Thames afford capital trout fishing. The nearest are the Wandle, the Malden, the Mole, the Wey, and the Colne, in all of which there is generally a good stock of trout; but these streams are for the most part very strictly preserved, and good fishing is difficult to obtain, except by interest with the proprietors. Buckinghamshire and Oxfordshire have the higher parts of the Thames, the Ouse, the Colne, and the Wick; Berkshire, Hampshire, and Wiltshire present the Kennet, the Lambourn, the Test, the Itchin, and the Avon; Dorsetshire and Devon have the Frome, the Axe, the Charr, the Coly, the Otter, the Exe, the Teign, the Dart, the Plym, the Tamar, the Taw and Torridge, the Lyn, and many smaller trout streams; whilst the borders of Wales afford the Teme, the Wye, the Lugg, the Usk, and some others remarkable for fine trout and grayling. Proceeding towards the north, we find good trouting-rivers in Derbyshire, Yorkshire, and the adjacent counties of Durham, Cumberland, Westmoreland, and Northumberland, where the Trent, the Erewash, the Dee, the Dove, the Derbyshire Wye and Derwent, the Ribble, the Eden, the Ellen, the Eamont, the Lune, the Swale, the Wharfe, the Ure, the Driffield, the Tees, the Wear, the Coquet, the Tyne, the Aln, and the various lakes of Westmoreland, with their tributaries, all of which contain fine trout, and may be expected to please the taste of the most fastidious angler, as well as to gratify the eye of the admirers of the beauties of nature.

Sect. 3.—Bottom-Fishing Rivers.

The Thames, the Lea, the Medway, and the New River near London, the Kentish and Dorsetshire Stours, the Ouse, the Cam, the Trent, the Severn, the Warwickshire Avon, and the Norfolk Broads, are the chief seats of bottom-fishing: together with the preserved artificial waters sprinkled throughout England in the ornamental grounds of our nobility and gentry. They are, however, so numerous, that an extended list would occupy too great a space, and the limits which can be assigned to the present subject forbid my going further into the scenes of the angler's passion, which is so strongly developed in the votaries of the art as to be only described with propriety by that word.

Sect. 4.—Angling Guides.

Those who desire more minute information upon the subject of angling quarters, I must refer to the "Angler's Diary," published by Mr. H. Cox, 346, Strand, which, although not perfect, contains by far the fullest list of places in the three kingdoms of any work with which I am acquainted. For the London angler, "The Rail and the Rod," by Mr. Greville Fennell, consisting of four parts, devoted to the fishing localities on four of the principal railways, will be a useful guide. "The Angler's Guide to North Wales," a little work sold by Mr. W. Pritchard of Wrexham, will render good service in that part of the country; Tod's "Trout-fishing in the Isle of Man" gives the localities of that island; Mr. Pennell's "Book of the Pike" contains a long list of pike waters in England, Scotland, and Ireland; and mention has been made above of books relative to the Tweed, and to the Scotch and Irish rivers and lakes.

CHAPTER VI.

EXPENSES OF FISHING, AND LAWS RELATING TO INLAND FISHERIES.

Sect. 1.—Expenses of Fishing.

The chief outlay on fishing was formerly the tackle, which may be made to cost any sum from three pounds to almost any amount. The average cost, however, of a complete outfit, will not be more than twenty pounds, if due economy is used in procuring fly-making materials. If, however, the angler is extravagant, he may easily spend from 50*l.* to 100*l.* in rods and tackle. Beyond this, the principal expense is the cost of the tickets for fishing, and travelling expenses. The tickets vary from a few shillings to about forty pounds per month, according to the nature of the sport and the locality. In many places hotel-keepers have the power of granting tickets for fishing on the waters belonging to their landlords. Particulars respecting these and the cost of tickets on many of the association waters will be found in the "Angler's Diary" mentioned in the previous page.

Sect. 2.—Laws Relating to Inland Fisheries.

The Lord of a Manor having the soil on both sides of a river has the right to the fish; besides which, there are three kinds of right to fish:—1, Free Fishing, which is an exclusive right to fish in a public river by royal franchise; 2, Several Fishing, giving an exclusive right to fish in the soil of another by grant from such owner; and 3, Common of Piscary, which is a liberty to fish with others in a river the soil of which belongs to another. Besides which, everyone has a right to fish upon the sea-shore, and in tidal waters between high and low water mark.

By the Act 24 & 25 Vict., c. 96, s. 24, passed in 1861, the taking of fish in water situate in land belonging to a dwelling-house is a misdemeanour, and if such water is private property, or if there is a private right of fishing in it, the person taking fish in it shall, on conviction, pay such sum not exceeding five pounds, over and above the value of the fish, as to the justice shall seem meet. But this does not apply to angling during the daytime. Tackle of fishers may be seized if offending against the provisions of this Act.

By the Malicious Injuries Consolidation Act, 24 & 25 Vict., c. 97, the breaking down of the dam of a fishery, or Poisoning Fish, is made punishable.

There are also certain local Acts affecting the Thames, Medway, Tweed, and other rivers, which limit the size of mesh to be used, the size of fish which may legally be taken, and the close times when they may not be taken.

The Law as to Salmon Fisheries was consolidated in 1861 by 24 & 25 Vict., c. 100, its sections being as follows:—

1.—Title of Act.
2.—Application confined to England, and not to extend to the river Tweed.
3.—Commencement of Act.
4.—Definition of terms used.
5–7.—Penalty for poisoning waters.
8.—Penalty for fishing with lights, spears, stroke-hall, snatch, &c.
9.—Penalty for using roe as bait.
10.—Prescribes net to be used.
11.—Interdicts fixed engines.
12.—Interdicts fishing at dams.
13.—Penalty for not erecting gratings at the mouths of artificial watercourses.
14.—Penalties for taking unclean fish.
15.—Penalty for taking salmon fry.
16. Penalty for disturbing spawning fish.
17.—Fixing close time between Sept. 1 and Feb. 1 (except that it shall be lawful to fish with rod between Sept. 1 and Nov. 1), under penalty not exceeding five pounds for each salmon caught.
18.—Home Office may extend or alter close time.
19.—Penalty for selling fish during close time.
20.—Fixed engines must be removed during close time.
21.—Weekly close time ordered.
22.—Free passage through traps must be left during weekly close time.

23–24.—Proprietors may make fish-passes to existing dams with consent of Home Office, first giving notice.

25.—All future dams to have fish-passes.

26.—Defines the supply of water to fish-passes.

27.—Free gaps, and their mode of construction.

28.—Orders free gaps in weirs.

29.—Defines the boxes and cribs which may be put in fishing weirs and mill-dams.

30.—Spur walls in fishing weirs.

31.—Home Office to have the superintendence of fisheries.

32.—Inspectors to report annually to Parliament.

33.—Justices to appoint conservators.

34.—Justices may grant search-warrant on suspicion.

35.—Recovery of penalties.

36.—Offenders on rivers between two counties may be tried in either.

37.—Where offences on sea-coast to be tried.

38.—Permits dredging.

39 and Schedule repeal certain Acts.

THE SALE OF SALMON during the close season having been prohibited in this country, unseasonable fish were poached in large numbers, and shipped to France, where they were readily bought. Accordingly in 1863 an Act was passed prohibiting the exportation of salmon that was not legally saleable here. In other matters, also, it was soon found necessary to increase the powers of the Act of 1861, and in 1865 an AMENDMENT ACT (28 & 29 Vict., c. 121) was passed, the provisions of which will be found described in the following summary of its sections :—

1–3.—Title and construction of Act, and definition of terms.

4–30.—On the formation of fishing districts, appointment of conservators, regulation of proceedings, enumeration of powers, &c.

31.—Entry of water-bailiff on land.

32.—Alteration of fish-pass or free gap.

33–38.—As to licences, and penalties for fishing without them.

39–55.—Appointment of commissioners to inquire into legality of fixed engines.

56.—When hard labour instead of penalty can be awarded for offences against salmon laws.

57.—Minimum penalties for ditto.

58.—Forfeiture of nets, &c. for ditto.

59.—Limitation of time for compensation for fish-pass.

60.—Consent of conservators necessary to take salmon roe for artificial propagation.

61.—As to justices hearing cases under salmon law.

62.—Payment of penalties to conservators.

63.—River Esk included in Act.

64.—Partial application of salmon laws to trout in salmon rivers.

65.—As to exportation of salmon.

66.—Appeal to quarter sessions, forms of notice, &c.

FURTHER AMENDMENT became necessary in a few years, and in 1873 the Act of 36 & 37 Vict., c. 71 was passed, of which the sections are as follows :

1–4.—Title of Act, commencement, definition of terms, &c.

5–10.—Secretary of State empowered to alter fishery districts and number of conservators ; formalities of doing the same.

11.—Convictions for offences against Salmon Acts to be notified by clerk of the justices to the board of conservators.

12.—Appointment of conservators for the Esk.

13.—Extension of the Malicious Injuries Act to the poisoning of salmon rivers.

14.—No draft net to be shot within 100 yards of another.

15.—No eel-baskets to be fixed between Jan. 1 and June 24.

16.—Penalty for deterring salmon from passing up rivers in the close season.

17.—Fishing prohibited within 50 yards above or 100 yards below a weir or mill-race, except with rod and line.

18.—Amendments of the Acts of 1861 and 1865, as to penalties, &c.

19.—Penalties on selling salmon during close time.

20.—Penalty on selling trout or char during close time.

21–25.—Provisions as to licences, application of funds, &c.

26–35.—Constitution of boards of conservators, mode of election, &c.

36.—Powers of water-bailiff to examine weirs, &c., search boats, nets, baskets, and other instruments used in fishing, and penalty for obstruction.

37.—Water-bailiff may enter on land.

38.—Persons fishing illegally at night may be apprehended.

39–45.—Boards empowered to make bye-laws for altering close season, determining size and mesh of nets, fixing licence duties, and other purposes, subject to consent of Secretary of State. Formalities attendant on same.

46–48.—Penalties on persons building or altering weirs, or injuring fish passes.

49–50.—Board may petition Secretary of State to allow compulsory purchase of weir or obstruction, for the purpose of removal; or to purchase part of bank for erection of fish-pass.

51–56.—Other provisions with regard to fish-passes.

57.—Board may levy additional duty for permanent improvements.

58.—Power to widen channels, place gratings at the mouth of streams, &c.

59–65.—Legal procedure, schedules, licence duties, &c.

Scotch Salmon Laws.

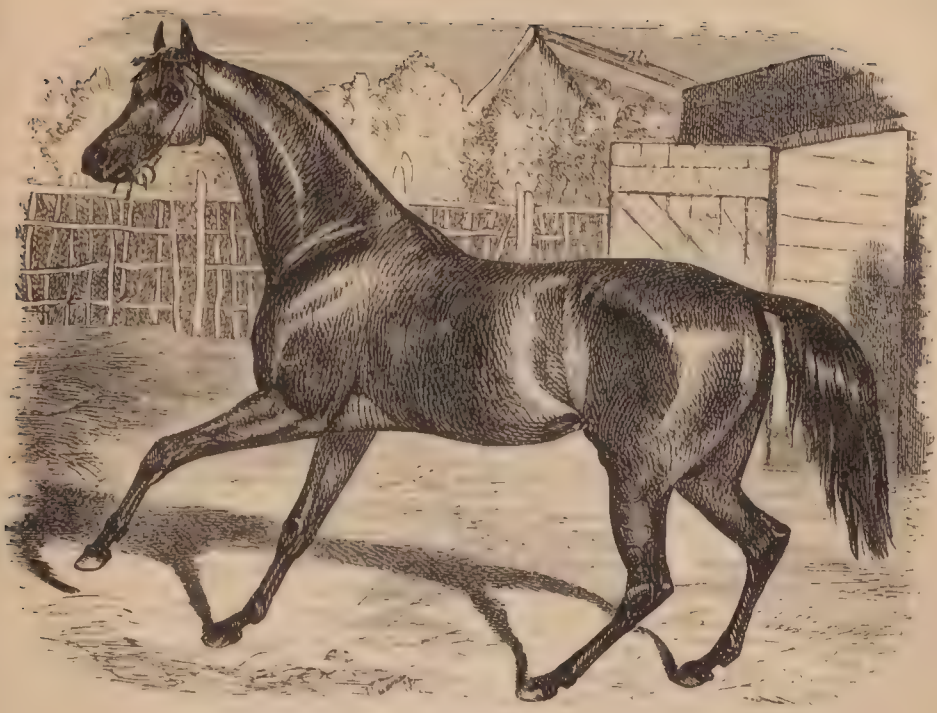
The Acts now in force in Scotland for the preservation of salmon are 25 & 26 Vict., c. 97 (1862), amended by 26 & 27 Vict., c. 50 (1863), and by 27 & 28 Vict., c. 118 (1864). The commissioners appointed under these Acts have made certain bye-laws, which must be studied by those who wish to know the exact local conditions of any river

Irish Salmon Laws.

The Acts as to Irish fisheries are 5 & 6 Vict., c. 106; 11 & 12 Vict., c. 92; 13 & 14 Vict., c. 88; and 26 & 27 Vict., c. 114. A very handy summary of them has been brought out by Mr. T. Brady, the senior inspector of Irish Fisheries, under the title of "Instructions to Water Bailiffs." It is published by Messrs. M'Glashan and Gill, Dublin.

Legal Handbooks.

The whole subject of the Fishery Laws of England and Wales, Scotland, and Ireland, is dealt with in an exhaustive "Treatise on the Fishery Laws of the United Kingdom," by Mr. J. Paterson, barrister-at-law, who officiated as chairman of the Special Commissioners for English Fisheries, and did good service during the long inquiry as to the legality of various modes of fishing, and the weirs and other obstructions, which existed in the various salmon rivers at the time of the passing of the Act of 1865. To this work (which is published by Shaw and Sons, Fetter-lane, London), I cannot do better than refer any one wishing for information on legal matters connected with our fisheries. Another work, on the Laws of the Salmon Fisheries only, has been brought out by Mr. J. Willis-Bund, who is vice-chairman of the Severn Fishery Board as well as a member of the legal profession.



PORTRAIT OF KINGSTON, BY VENISON, OUT OF QUEEN ANNE.

PART II.

BOOK I.—HORSE-RACING.

CHAPTER I.

GENERAL REMARKS ON HORSE-RACING.

THE sole object for which horse-racing was originally established, and has since been supported by the powers that be, is, confessedly, the encouragement of the breed of English horses. No one can contend with a semblance of reason that in any other view it is capable of standing its ground as a national sport; for it is certainly alloyed with numberless objectionable concomitants; and it requires a strong inducement to those who wish well to the morals of the people to counterbalance these disadvantages. But while wars are inevitable attendants upon our fallen nature, well-mounted cavalry are essential to our existence as a nation; and unless a great encouragement is afforded to our horse-breeders, we shall speedily lose that pre-eminence in horse-flesh for which we have always been remarkable. It is quite true that while the exportation of horses is allowed, other nations participate in our advantageous position; but still, in case of a struggle near at home, that source of supply could be cut off, and we should neither export nor import them to any extent. But if it can be shown that a superior breed of horses is necessary or desirable for national defence as well as other purposes; if that breed is only likely to be maintained by extraordinary encouragement; and if racing alone keeps it up in any numbers, and in its pristine purity—then, until some substitute is discovered, every patriotic Briton must lend his aid to its progress, or at all events avoid opposing its proceedings. Nevertheless, he may at the same time rigidly oppose the fraudulent actions and even gross robberies which are too common on the turf, because there can be no real reason why the practice of running horses should be attended with more frauds or deceptions than exist in

any other kind of competition. The causes of these attendant evils are plain enough, and it only rests with the public to encourage or remove them. This, however, is a subject which will be better considered as we go on in the examination of the details of horse-racing; and the only thing now necessary is to be thoroughly satisfied that the existence of our superior breed of horses depends upon the maintenance of the sport of horse-racing, leaving its purgation to a future time. In order, however, to enter fully into this question, two points must be assumed, which will be found fully supported by argument as we proceed. These are, first—that the high-bred horse is comparatively useless for any other purposes but racing, hunting, and the production of half-bred stock; and the breed would consequently soon dwindle down into very limited numbers if the only present inducement were taken away. Secondly, that speed and stoutness can only be tested by competition, which must take the form of racing in some shape; for without this trial the horse-breeder could form no opinion as to the goodness of the stock from which to make his selection, because the external form is not sufficient for him, as every breeder knows, and with that guide alone he would be constantly liable to produce a showy but useless brute. If these two points are proved, it follows that racing in some shape must be maintained; and that it should be encouraged by the offer of Royal plates and other means, in order to tempt the wealthy and the noble of the land to devote their opportunities to produce this stock in the highest state of perfection and purity.

Introduction of Handicaps.—The bad tendencies of racing are now so firmly connected with its practice, that no means short of a strong legislative enactment will, I am afraid, cope with them effectually. The cause of the evil is plain enough; but the remedy is not so easy, without at once cutting away almost the entire system upon which the sport is now conducted. This I will now endeavour to explain in as few words as possible. Until within about fifty years nearly all races were run under weights fixed according to the age or height of the horses competing in them; but at that time it was found that by means of vans and, since then, by railroads, a few good horses swept everything before them, and consequently there was great difficulty in making up sufficient sport for the spectators, or in affording good stakes even for good horses; for when it was known that a good horse was likely to make his appearance at a race-meeting, no other entries were effected, and the result was a "walk over," or sometimes, when no public money was added, not even that. In order, therefore, to meet these difficulties, various race-committees decided upon adopting the system of handicapping, which was in use long before that time, but mainly for private matches.

The nature of this device is such as to offer a premium to fraud and deception; for without these a horse has little chance of winning a handicap, if he runs every month from March to November. The reason is obvious enough, because it is only by deceiving the handicapper that a horse gets weighted below his real powers, and thus is enabled to win. To the uninitiated it is perhaps necessary to explain, that the handicap-race is one which is offered to horses of every description within certain wide limits, each of whose owners enters his horse by paying a certain sum, after which the handicapper fixes such a weight upon each as to bring them to a level at the winning-post—the owner, after the weights are fixed, having the option of forfeiting his stake, or of adding to it an additional sum. Thus it will appear that, if the theory could be carried out to perfection, all the horses engaged would come in abreast; but in practice it is liable to error, because the handicapper, in order to form his opinion of their powers, is guided by their previous running in public, and therefore it becomes the object of the proprietor of a horse which is intended to run in a handicap of importance, to run him in previous races expressly to lose, or, in the language of the turf, "to get the weight off." Hence, all those engaged in these devices are constantly attempting to deceive the handicappers into the belief that their horses are worse than they really are, and sometimes a horse is run for a whole season, or even more than one, in various stakes, without allowing him to win, and all in order "to get the weight off" against some grand *coup*. In former days this

would have been considered highly dishonourable, and such an act has more than once been visited by the displeasure of the Jockey Club, even where the order to "pull" has been given from a less unworthy motive; but now-a-days the act is so common, that the owner of a "badly managed horse" earns the contempt of the whole "ring." Nor can this occasion surprise, when it is remembered that the very conditions of the race are a standing temptation to dishonour. Man is sufficiently prone to vice without extra stimulus; but to offer more than his nature prompts him to is the height of absurdity and folly. So fully is this malpractice recognised on the turf, that it has become quite a proverb that "a bad horse well managed is better than a good horse badly managed;" and that he brings in more money is clear enough. Hence, if money is the great object of the racing-man—as is unfortunately too much the case—the above proverb is quite applicable, and the inferior horse it often much more profitable to his owner than his vastly better companion.

Many instances could be adduced in which horses have been engaged for a whole season, in their third or fourth year, solely to get them "well in" for the next year's spring-handicaps, which they have swept away in consequence with the greatest ease; but the facts are so notorious that it is quite unnecessary to dilate farther upon them. Suffice it to observe, that it is universally admitted by all who are in the secrets of the turf, that horses are constantly entered and run solely with the view of inducing the handicapper to "weight" them at a low scale; until at last the practice has become so notorious that its object is almost defeated; for, as all, or nearly all, are alike engaged in the same game, the handicapper is obliged to resort to other modes of ascertaining the relative merits of the horses, and is not always guided by the place which a horse occupies as to the weight which he shall give him. But this is the exception to the rule, which is still made to be dependent on public running; and though in some flagrant cases horses may be crushed out of the field by the weight given them, yet in the majority of instances, by patience and ordinary cunning, or *prudence*, as it is called, the handicapper is at last induced to accord such a low weight as will almost insure the coveted success, barring all accidents; and then the money "goes on" in earnest.

It may be urged in favour of these races, that they afford some encouragement to breeders, because if a colt, the result of their outlay, time, and trouble, is not first-rate, he may still in a handicap obtain a good prize; but the worst of the business is, that success here is not made to depend upon the relative goodness of the horses, but on the relative badness of those who manage them. Nothing would be more easy than to give encouragement to second or third-rate horses, by offering stakes open to those which have never won more than a certain sum; and this used to be the practice at small meetings; but though it benefited the horse-breeder, it did not suit the purposes of the "book-maker," who requires a larger field of horses, in order to give him an opportunity of "betting-round;" nor of the race-committee, who wish the same thing, in order to draw company to their meetings. Hence arises the extraordinary success of handicaps, as they suit the purposes of so many parties, viz., the betting fraternity, the owners of inferior horses, and the race-committees, and are only prejudicial to man as regards his morals, and to the first-class horse in reference to his powers of carrying weight. If the breed of horses were dependent upon these races alone for encouragement, it would rapidly deteriorate, and the speedy, flashy animal calculated to carry six stone, would be the *summum bonum* of the breeder's views.

THE DERBY, OAKS, AND ST. LEGER have, however, been fortunately preserved from this influence, and been the means of avoiding the evil tendencies of the handicaps as regards the horse, though, unhappily, they are almost as much prostituted to the purposes of the ring as their modern competitors for public honours. These great races are real tests of the merits of the horse, and many noblemen and gentlemen of unblemished honour have succeeded in winning them; indeed, in their annals, the success of a horse belonging to "a book-maker" is a comparatively rare event. Their great defect is that they are too much dependent upon the fluctuations of the "betting-ring," and that when the money invested by the public is so

enormous, the temptations to fraud, in some shape, are enough to insure its frequent perpetration. To be straightforward and candid in avowing the powers of a superior animal would be enough to insure his downfall in many cases, and hence the necessity for all the secrecy which is practised or attempted in the racing stable. No sooner is a Derby horse at short odds than he is the mark for numberless "touts," who would be too ready to destroy his health or legs if they could obtain an opportunity. This often has happened; and in the case of a good favourite, the fear of its recurrence necessitates constant vigilance, and the supervision of an Argus. It is true that some do pass the ordeal, but others very frequently succumb; and the safest plan is undoubtedly to keep the public in the dark as to a horse's qualifications, if possible.

Evil Tendencies of Betting.—As already remarked, these races are often taken advantage of by the betting-man to make money, and horses are entered and made favourites solely for the purpose of laying against them, or "milking," as the plan is denominated, and thus making sure of a large sum of money—not so great, it is true, as that which could be landed by success, but still sufficient to insure a paying return. In some cases two or three horses are entered by the same party, one of which is "meant" to run, and is kept back in the betting, whilst the others are never intended to win, but are used solely as a means of insuring such a sum as shall pay all expenses, and perhaps a little more, in case of the failure of the one intended to win. All this chicanery is no doubt very bad, but it is not necessarily attendant upon racing, and is not, as in the handicap, encouraged by the very terms of the race. Wherever betting is practised to any extent, there is sure to be some kind of over-reaching, whether on the stock-exchange, in the gambling-house, at the hop-markets, or on the turf; but this has nothing to do with the events upon which those bets are made. It might as well be alleged that the growth of hops was very immoral because when they were liable to duty they were made the groundwork of incessant gambling, as that horse-racing has that tendency. No doubt both are attended with evil; and if hops and horses could be dispensed with, perhaps there might be some little difficulty in supplying their places with equally uncertain and fluctuating materials; but while straw can be drawn out of a rick, or maggots can be raced over a plate, bets will be laid to any amount which will suit the ideas of the bystanders; and even the total destruction of horses and hops would fail in rooting out this propensity to gamble.

The Reform of the Turf is now becoming a necessity of the age; and as the destruction of racing is far from desirable, and it may be shown that it would be highly prejudicial, its continuance in some shape is to be supported, and the only thing to be done is to insure its purgation from those vices which now sully its reputation. Betting *must* be left to take its chance subject to proper regulation; no legislative enactment can prevent men from staking money in support of their opinions, and it only becomes a question how far it is desirable to enforce the performance of the contract in a court of law. The constant "milkings" and "scratchings" of favourites have made backers so cautious, that the books which formerly were opened many weeks before every event of the slightest importance, now seldom have a single bet pencilled until the numbers are exhibited on the telegraph-board; and this is always the course which prudence will dictate. But while the betting-man may be suffered to take his chance, there can be no reason why racing should not be raised from the low ebb to which it is now reduced. The task is a difficult one, and I am not sanguine enough to suppose that it can be effected by the efforts of an individual; still, time will work the cure, for there must be an end to such a rotten system as that which is now pursued. Whenever it is found that frauds fail in their object they will cease to be attempted; and when all are engaged in the same unworthy mode of deceit, the end must be that they will all alike fail, and thus the evil will work its own cure. If by any means, handicaps, those unworthy features of the ordinary race-card, could be eradicated, a great blow would be levelled at the betting fraternity, who exist in great measure from the pickings derived from them. Only three great betting races a year would not

suffice for their capacious maws; the loss of the handicaps would be too severely felt; and therefore, though I do not advocate their cessation in order to purge the "ring," yet this effect would by no means be disagreeable to me or prejudicial to the interests of the racing world. Nothing can exceed the beauty of the horses engaged, and no scene can be imagined more exciting than a well-managed race-course with a large field of high-bred horses; but the adventitous incubus of the betting-ring is certainly not to my taste, though I have no quarrel with it, believing it to be a necessary evil, and a safety-valve for the exuberance of loaded purses; and the high health of youth and inexperience. Let the management of the public races be under some general board of control, appointed by the Secretary of State for the Home Department, and let all premiums to fraud be done away with as far as possible, and then the full benefits of the system may be expected, without the dreadful alloy now incorporated in its very essence. The Jockey Club has certainly done something, but its members are too much concerned in betting transactions themselves to carry the reform far enough, and I fear little real good is to be expected from them. Gross cases have been visited by condign punishment, but this is the more unfortunate when it is notorious many the members of the Jockey Club allow their trainers to run their horses expressly "to get the weight off." Race-committees are spread so widely over the whole land, and compete so constantly with one another, that it is not to be expected that they shall reform themselves; but if they were obliged to submit their programmes to a responsible public officer, and if certain rules were drawn up for their guidance, they would be compelled to abide by his decisions, and conform to his regulations. All proved acts of fraud, such as "running horses to lose," &c. &c., should be punishable either by exclusion from the course or by heavy penalty; and though they could not be prevented entirely, they would to a great extent be diminished in frequency and importance. No one now can be punished for betting against his own horse with the full intention of robbing the public, but some law to that effect ought, if possible, to be framed which should stamp the act with infamy, even if it did not entirely prevent it. Such must be the course which will be forced upon the legislature sooner or later, if the turf is to be restored to the condition of utility, as a means of keeping up the breed of horses, which it formerly enjoyed. How soon it may be carried out will of course depend upon circumstances which are yet enveloped in the future.

Racing is Divided into Flat-racing, Hurdle-racing, and Steeple-chasing, Riding to Hounds, and Match-trotting. The first division of these is now practised all over the three kingdoms. The second is also common enough, and is sometimes mixed up with flat-racing at the summer meetings; but it belongs more to the division of steeple-chasing than to flat-racing, as they both require the horse to be able and willing to jump over the obstacles placed in his way. Riding to hounds is now a complete race, and may well be classed with other forms of racing, though not attended with any formal prize; still its votaries compete with each other as ardently as the jockeys on the race-course, and the pursuit of fox-hunting is in many countries more often a daily steeple-chase, than the prosecution of the sport called fox-hunting. Match-trotting is now almost exploded; but as it still is occasionally practised, some account must be given of the mode of conducting it.

The Horses Employed in these various kinds of races are—first, the thorough-bred horse, which is now almost the only horse used on the flat; secondly, the half-bred, or cocktail, which is generally about fifteen-sixteenths of the blood of the pure thorough-bred horse, and is used as a hurdle-racer, steeple-chaser, or hunter. Many of these last are quite thorough-bred; but the most successful steeple-chasers have frequently had some stain in their pedigrees, though not more than one-sixteenth, or even one thirty-second part, as in the case of that wonderful horse The Colonel, twice winner of the Liverpool Steeple-chase, in 1869 and 1870. Hunters and trotters are more frequently about seven-eighths of pure blood, but many of them have even less of that valuable article, and some again, are quite thorough-bred. The subject, however, will be found here

after more fully entered into under the several heads of the Race-horse, the Steeple-chaser and Hurdle-racer, the Weight-carrying Hunter, and the Match-trotter.

CHAPTER II.

THE THOROUGH-BRED RACE-HORSE.

Sect. 1.—Definition of the Thorough-bred Horse.

This is not quite so simple as is generally supposed, for though the thorough-bred horse is said to be of pure Eastern blood, this is not really the case when traced back to the earliest times of which we have any account. In the pedigree of Eclipse the breed of nearly a dozen mares is unknown ; and the same amount of impure blood, or nearly so, will be found in every horse of his date—that is to say, if they are as far removed from the primary roots of all our best stocks. Hence, this definition will not suffice, since it is clearly not applicable to a horse whose blood runs in almost every breed of the present day ; and not only to him, but to others as well. The only criterion, therefore, which will hold good as a definition, is the appearance in the "Stud Book," where every horse or mare considered thorough-bred is registered ; and, by common consent, this is accepted as the test of pure breeding. All horses, therefore, which are the produce of mares therein described, and by horses also to be found in its pages, are called thorough-bred ; and all others are commonly designated as half bred, whether composed of half pure blood, or three-quarters, or seven-eighths, or any other proportion. Many of our half-bred stallions are very nearly pure, but nothing can now wash out the stain which formerly was considered easily eradicated by a few crosses of Eastern blood.

Sect. 2.—Origin of the Thorough-bred Horse.

We are indebted to the Stuarts for the first great improvement made in the breed of our horses, James I. and Charles I. having introduced the Arabian blood, and Charles II. laying the foundation of our present breeds by importing several mares (called Royal Mares, from their master), to which may be traced the celebrated horses of the latter end of the last century, and some of our best modern breeds. Numerous Eastern horses were also imported at various times, including the following, all of which are named in the "Stud Book":—

Arabians.

Duke of Ancaster's
Alcock's
Basset's
Duke of Beaufort's White and Grey
Bell's
Bethell's
Blackett's
Blair's
Bolingbroke's Bay
Bright's Roan
Lord Brooke's
Burlton
Bunbury
Chesterfield
Clements'
Clifton
Coomb
Conyers
Croft's Bloody Buttocks
Cullen
Curwen's Chestnut
Cyprus
Damascus
Lord D'Arcy's Chestnut
Darley
Duke of Devonshire's Chestnut
Eaton
General Evans's
Ferrers
Fletcher's
Sir E. Gascoigne's
Gibson's
Godolphin
Gregory's
Gresley Bay Roan
Grosvenor
Hall's
Hampton Ct. Chestnut and One-eyed Grey
Harpur's
Honeywood
Khalan
Leedes
Lexington
Litton Chestnut
Lonsdale Grey and Bay
Lord Lovaine's
Markham's Grey
Milward's
Lord Morton's
Newcomb Bay
Sir M. Newton's Bay
Duke of Northumberland's Chestnut, Golden, Bay, Grey, and Brown
Oglethorpe
Ossory
Lord Oxford's Dun and Bloody-Shouldered
Oxlade's
Panton's
Parker's
Pembroke
Lord Algernon Percy's Grey
Philippo's
Pulleine's Chestnut
Radcliffe's

Ld. Rockingham's
Rutland
Saanah
Sir C. Sedley's
Sir John Sebright's
General Smith's
Somerset
Stanyan's
Sir R. Sutton's Grey
Thompson's Grey
Vernon
Ward's
Wilkinson's Bay
Williams's Woodstock
Wilson's Chestnut
Witham Grey
Sir W. Wynn's Bay

BARBS.

Burton
Lord Carlisle's
Chillaby
Cole's
Compton's
Croft's Bay
Curwen's Bay
Curzon's Grey
Dodsworth
Fairfax
Fenwick
Godolphin Grey
Gower Dun
Greyhound
Halifax Roan
Sir J. Harper's
Hampton Ct. Cripple
Hutton's Grey and Bay
King William's Blk. No-tongued
Admiral Keppel's
Layton
Lowther (White-legged)
Lord March's
Duke of Marlborough's Little Mountain
Massey Black
Sir W. Morgan's Grey and Black
Moonah (Queen Anne's)
Morocco
Orford
Panton Grey
Pelham
Duke of Rutland's Black
Shafto's
St. Victor's
Taffolet
Tarran's
Thoulouse
Lord Townshend's Brown
Vernon
Walpole
Wolseley

TURKS.

Akaster
Belgrade
Brownlow
Byerly
Lord Carlisle's
D'Arcy's Yellow and White.
Devonshire
Fawkener's
Sir E. Hale's
Helmsley
Holderness
Lister or Straddling
Mulso Bay
Newcastle
Paget
Philipson's
Philips's Brown
Pigot
Place's White
Duke of Richmond's
Capt. Rouksby's
Rutland Grey
Selaby
Stamford
Strickland's
Sutton
Wastell's
Wilkinson's

PERSIANS.

Lord Burlington's
Lowe's
The King's (1769)
Com. Matthews's

BUT THE CHIEF ROOTS of our best horses may be considered the three following Eastern horses:—First, the Byerly Turk, of whom nothing more is known than that he was Captain Byerly's charger in Ireland in 1689; secondly, the Darley Arabian, imported by Mr. Darley, of Yorkshire, very early in the eighteenth century, supposed about 1710; and the Godolphin Arabian (not to be confounded with the Godolphin Grey Barb) imported a few years later, and first used as a sire in 1731, in consequence of the failure of Hobgoblin, to whom he acted in the ignoble capacity of teaser.

From the two Arabians and the Turk above-mentioned are derived all our best breeds, in whose pedigrees their names will invariably be found mixed up with more or less of the descendants of the other Eastern horses and mares given in the previous list. In examining pedigree-tables it is customary to trace the descent chiefly through the male line, and hence various horses are considered to be descendants of one or other of these three horses, when they really own more of the blood of one or both of the other two. Thus Eclipse is generally said to be a descendant of the Darley Arabian—and so he was—being a son of Marske, who was son of Squirt, who was a grandson of the Darley Arab, through Bartlett's Childers; but then Eclipse was out of Spilletta, who was by Regulus, son of Godolphin, and consequently he was composed of one-eighth Godolphin and one-sixteenth Darley Arabian blood.

It has been contended by some persons who have written on the horse, and among others by Mr. Hanckey Smith, that we owe more to the previous breeds for the goodness of the two Childers and their stock than to the Darley Arabian; but this I cannot help thinking is a fallacy, and for the following reasons. It will be seen, by a reference to the pedigree-tables, that the blood of the Darley Arabian, together with that of the Byerly Turk and the Godolphin Arabian, is met with ten times as often as that of any other, whether a Royal Mare or Lister Turk, which come next perhaps to these successful sires in point of frequency. Now, if the goodness of Eclipse were owing to the Lister Turk and Hautboy crosses in his pedigree, how comes it that in subsequent breeding we

do not find this blood predominate in our first-rate horses? If, however, on the contrary, we find all our best stock absolutely deluged with the Godolphin, Byerly Turk, and Darley Arabian, to the exclusion almost of any but scattered fragments derived from the various names I have given above, we are compelled to assign the chief honours to these three; and it only becomes a question whether, though they were originally the cause of the goodness, they may not now by long perseverance require a little fresh importation of new blood. But that they are the great guns of the pedigree lists an examination of the subsequent pages will readily show.

In the present day, however, it is scarcely desirable in theory, and it is wholly impossible in practice, to separate these roots, and to value them in comparison with one another—inasmuch as the present generation of horses is so much removed from the age in which they lived. Few of our present horses are within eight or nine removes from Godolphin; and Cotherstone and his sister Mowerina were, I believe, the only recent horses of any note who rank him as an ancestor in the sixth remove. The distance from the Darley Arabian and Byerly Turk is still greater, though in some cases not more than two removes further off. For the sake of convenience, therefore, I shall give a list of the most prominent horses and mares removed from our present horses about six or eight degrees, with a description of their pedigrees and peculiarities; and then trace up our present horses to them, so as to ascertain the relative value of these elements, and the propriety of going back to them or avoiding them respectively in making the selection of breeding-stock. Nothing is so difficult as to make this calculation without having the full pedigree before the eye, because it is impossible to grasp all its details by a reference to the usual mode of giving it in the "Stud Book." But from a more careful investigation it will, I think, result that certain horses and mares removed only to this extent are highly to be prized, while others are gradually becoming extinct; and according as the former predominate, or are absent, will the strain be valuable or worthless.

Sect. 3.—The Horses and Mares from which our present Breeds are chiefly Derived.

A List of Horses and Mares removed seven or eight times from our present horses—that is, about a hundred years—will be valuable to the breeder, inasmuch as it will enable him to comprehend at once the annexed tables of our present most distinguished horses and mares. At the head of this list I shall place the following celebrated sire:—

Herod, or, as he was formerly called, King Herod, was foaled in 1758, and was bred by the Duke of Cumberland, and sold to Sir John Moore, in whose hands he was a great performer on the race-course, though not always victorious like his son Highflyer, or those renowned runners, Childers and Eclipse. He was a very fine horse in appearance, with great speed and power; but his fame now rests upon his stock, which in the first generation produced 497 winners, and realized more than 200,000*l*. By a reference to his pedigree, given in table 2, it will be seen that he was bred almost entirely from Eastern blood, but with several flaws nevertheless, any one of which in the present day would vitiate a pedigree. He is usually considered as a representative of the Byerly Turk, but is really more of the Darley Arabian by one-half, one sixteenth of his blood belonging to the former horse, and three thirty-seconds to the latter. This is caused by the fact that Herod had one infusion of the former and two of the latter. Flying Childers appears as his maternal great-grandfather; and to him, I suspect, is due the merit which Herod must always claim, of being the most valuable ingredient in the composition of our present breeds of horses. In examining the pedigree-tables, he is met with more commonly than any horse of his time; and I think I shall be able to show, as a rule (liable of course to exceptions), that according to the amount of his blood in the pedigree is the value of the animal as a racehorse. Spanker forms not quite one-sixteenth of Herod, which proportion is made up by combining the three more remote strains into one. The Leedes Arabian also makes up one-sixteenth by a combination of their strains; and Bethell's Arab also lays

claim to a chief share, since he forms an entire eighth of Herod; but as he has not much reputation derived from other sources, it can scarcely be considered that the goodness of Herod is derived from him.

MATCHEM will come next in importance, as in point of time, in which respect, indeed, he ought to take precedence of Herod, having been foaled in 1748; but as I believe he does not prevail quite to the same extent in the pedigrees of our horses, I have lowered him beneath the above celebrated horse. Although in the male line he is the only representative of Godolphin of his time, yet he shares the honour of transmitting the blood through the female side with Miss Ramsden, Molly Longlegs, Rachel, Lisette, Folly, &c. &c., the last being by Blank, son of Godolphin, out of a daughter (sister to Regulus). The pedigree of Matchem is given in table 1, which will show his composition as derived in great measure from Godolphin, and as exhibiting very few flaws. St. Victor's Barb, Akaster Turk, the Byerly Turk, and the Oglethorpe Arabian, each make one-sixteenth, which proportion Curwen's Barb also takes. Spanker again appears in this pedigree, but in a smaller degree than in that of Herod. Matchem was a very good racehorse, and was nearly always victorious; as a stallion, he does not come up to Herod, but he was the sire of 354 winners, whose joint winnings amounted to more than 150,000*l.*

ECLIPSE, the pride and boast of the race-course, is usually ranged among the descendants of the Darley Arabian, of whom he is the only representative in the male line who can be traced in the same way to our present breeds; but by examining his pedigree (table 4), it will appear that he has twice as much of the blood of Godolphin as that of the Darley Arabian, the former composing one-eighth, the latter one sixteenth part. Besides these, we find the Lister Turk making up nearly an eighth part, the D'Arcy White Turk rather more than one-sixteenth, and the Royal Mares the same proportion. He was bred, like Herod, by the Duke of Cumberland, and sold at his death to Mr. Wildman, who resold him to Mr. Kelly, by whom he was run, at five years old, with the extraordinary results which are known to everyone familiar with the annals of the turf. He was never beaten, and won eleven King's Plates, besides other stakes. In shape, he was very long and low before, and his temper was so bad as to occasion great difficulty in riding him. His winning produce, both in numbers of horses and value of winnings, was nearly the same as that of Matchem—being winners, 344; value, 158,000*l.*

RACHEL, FOLLY, MISS RAMSDEN, PRINCIPESSA, LISETTE, AND MOLLY LONGLEGS, were all grand-daughters of the Godolphin Arabian, and most of our best horses exhibit one or more of their names in their pedigrees, some of them indeed combining nearly all of them together. Their pedigrees are given in full in the following tables; where also will be found those of Snap, Bay Bolton, Gipsy, Babraham, and the Large and Little Hartley Mares; also, Cole's Foxhunter, Young Belgrade, Giantess, Soreheels, and Careless; all names constantly occurring in the seventh or eighth remove from our present horses. The first table exhibits among Matchem's ancestors—Partner, Sister to Mixbury, the Bald Galloway, and Spanker; in the second table are given with that of Herod the pedigrees of Blaze, Childers, Fox, and Merlin; and lastly, in Eclipse's table are given those of Spilletta, Regulus, Mother Western, Snake, and Hautboy.

TRENTHAM, bred by Sir John Moore, in 1766, was sold to Sir John Ogilvie, and realized in stakes more than 8,000 guineas, an enormous sum in those days. He was afterwards used for stud purposes by Lord Egremont, and appears in the pedigrees of Melbourne, Lanercost, Alarm, &c., as the sire of Camilla (1778), who was out of Coquette (1764), a mare bred by Lord Bolingbroke, and got by the Compton Barb, out of Sister to Regulus (see table 48).

SYPHON, foaled in 1750, combines several strains of old blood through Squirt, son of the Darley Arabian, Bay Bolton, son of Grey Hautboy, twice—and Sister to Mixbury, daughter of Curwen's Barb. His pedigree is in table 49.

CRAB, son of the Alcock Arabian, and of a sister to Soreheels (table 5), will be found to transmit this blood to several of our best stocks; he is not, however, represented in the male line by any of our present horses.

CHILDERS, better known as "Flying Childers," is not represented in the male line, but his blood prevails very extensively through Lisette, Elfrida, Hyena, Curiosity, Papillon, and Promise, all of them daughters of Snap, his grandson. Their names are constantly found in the sixth or seventh remove from the present day, in company with that of Herod, also a great-grandson of Childers, as already remarked in the previous page. His career on the turf was a very remarkable one, even in those days when comparatively little use was made of a first-rate horse. He was never beaten, and is said to have carried 9st. 2lb. over the Round Course at Newmarket (3 miles 4 furlongs 93 yards) in 6 minutes 40 seconds; which is as nearly as possible fourteen seconds a furlong—being nearly the highest rate at which the Derby course has been covered in these days, with less weight, and not half the distance. But as I shall hereafter show (Chapter III.), this has been surpassed by West Australian and Kingston, at a later period of their development—viz., when four and five years old respectively.

SPORTSMISTRESS, foaled in 1765, will always be remarkable as the dam of Pot-8-os, by Eclipse. She was a great-grand-daughter of Godolphin, and thus gave her produce a fresh infusion of that blood already predominating in Eclipse. Besides Godolphin, she was largely imbued with the blood of Crab, who was grandsire on both the dam's and sire's side of Goldenlocks, her dam. Thus Sportsmistress was much in-bred with Crab, and by her union with Eclipse hit with the blood of Godolphin. Besides Pot-8-os, who was her first foal, she produced ten others, but none of any great value. (See pedigree table 63.)

BRUNETTE, the dam of Trumpator, Cantator, Pipator, &c., was foaled in 1771. She combines the blood of the Godolphin Arabian with that of the Byerly Turk, the Darley Arab, Bloody Buttocks, Greyhound, Ancaster Starling, and the Newton Bay Barb; she was not much in-bred (pedigree table 50).

RACHEL, foaled in 1763, by Blank, son of Godolphin, and out of a granddaughter of the same horse, is remarkable as being the dam of Highflyer by Herod, and Mark Anthony by Spectator. In the first case there was a very close in-breeding to Godolphin, and an out-cross into the Herod blood producing the invincible Highflyer; and in the other case a continuation to some extent of the in-breeding produced an inferior horse to Highflyer, but one far above the average. Here the blood of Soreheels was in both sire and dam.

The celebrated PRUNELLA must not pass unnoticed, as the dam of two of the most renowned brood-mares which ever lived—viz., Penelope, by Trumpator, dam of Whalebone, Whisker, Woful, Web, and Wire; and Parasol, by Pot-8-os, dam of Partisan. It will be seen that she received a second infusion of the blood of Childers from her dam though Snap, her sire being, through Herod, descended also from that celebrated horse by the collateral line of Cypron, daughter of Blaze, another of his sons. Like most of the best mares of her day, she inherited blood from each of the three great eastern sires, the preponderance, as usual, being in favour of the Godolphin Arabian.

The most extraordinary brood-mare in the whole Stud Book is the ALEXANDER MARE, whose pedigree is given in the 74th table of this book. She was dam of three first-rate stallions—viz., Castrel, Selim, and Rubens, whose blood is justly considered to be of the very highest caste; Castrel being of late years represented by Pantaloon, Selim by Bay Middleton, The Flying Dutchman, Cowl, Pyrrhus the First, and a whole host of celebrities; while Rubens, though extinct in the male line, is yet maintained in reputation from the value of the breeding-stock left by Defence, who was a grandson on the dam's side of the above horse. In this way most of our present fashionable horses trace back to this mare.

SECT. 4.—SERIES OF TABLES OF PEDIGREES.

The following series of tables contains the pedigrees of our present most remarkable horses, traced up, as a rule, to the highest point which is given in the Stud Book. Each will be found generally divided into two or more sections, in order to avoid the endless repetitions which would otherwise occur; but by reference to those

tables where the full pedigree is made out, it will generally be easy to follow out the investigation by turning to the table indicated by the figure, or looking at the index. Most of our modern horses are derived from about two dozen mares, generally closely related to one another; and thus, by giving the pedigrees of those mares once, it is unnecessary to repeat them so constantly as would be required if each pedigree were made out at full length up to its root. The great point in examining a pedigree is to have all the recent ramifications presented to the eye at once, so as to grasp all its bearings at a glance, and thus estimate the relative importance of the various elements composing it. For instance, in examining the pedigree of Bay Middleton, we should be told that he was by Sultan, out of Cobweb, by Phantom, and then perhaps the investigation would cease in an ordinary way; but by turning to the table giving his pedigree with that of his son Andover, it will appear that he is descended from the same blood as many others of our best horses—as, for instance, Williamson's Ditto, Julia, sister to Cressida (dam of Priam), Web, sister to Whalebone, &c., &c.; and thus we should not only attain some knowledge of his own elements, but also arrive at certain conclusions as to his fitness to combine with other strains of blood. The same will apply to every table here published, but it would lead to an endless discussion, if I were to go into all the remarkable features exhibited in them. Suffice it to say, that they show at a glance, in each case, the strains from which all our most successful modern horses are derived, and enable the breeder to make his selection with the fullest chance of not overlooking any horse remarkably well suited to his purpose.

In comparing these tables some names meet the eye continually—as, for instance, Eclipse and his sons Alexander, Pot-8-os, Joe Andrews, Saltram, Dungannon, Mercury, and King Fergus; and Herod and his son Highflyer; Matchem also is constantly met with, but not so frequently as Herod, Highflyer, and Eclipse. The value of these names is such, that I believe the goodness of a particular strain may generally be estimated by the amount of Herod or Eclipse blood in the pedigree, especially that of the former. Highflyer, combining the blood of Herod with that of the Godolphin Arabian, is also particularly valuable as a progenitor, and, perhaps, even more so than Herod when derived through other sources; but taken as a whole, whether coming to us through him, or through Maria, the dam of Waxy, or through other sources, I believe that, *cæteris paribus*, it may generally be assumed that in proportion to the amount of Herod blood found in the sixty-four progenitors of any horse in the sixth remove, will be his value as a racer; and when this amount is large, with the addition of a liberal allowance of Godolphin blood, and that of the Darley Arabian through Bartlett's Childers and Eclipse, the combination is of that quality that it cannot be excelled. Let the investigator into the *arcana* of the breeding stud calculate and compare for himself these elements, as contained in the annexed tables, and I think he cannot fail to come to the same conclusion. But independently of the value of these tables in giving an idea of the various combinations of strains composing each pedigree, they are also of great use in leading to an estimate of the propriety or otherwise of in-breeding. Without such a guide as is here afforded, it is impossible to guess even at the curious relationships which exist between the ancestors of our present horses of note. Wherever the full table is given, if the eye is cast down the several columns, the chances are that the same name occurs again and again, and in this way the conclusion is forced upon us, that in-breeding to some extent has been always adopted, and almost of necessity, because every horse of note is now derived from the same sources, though often variously mixed, and sometimes kept in a distinct strain for several generations. All these points, however, should be carefully studied, and hereafter will be again alluded to in entering upon the subject of breeding, and the laws which regulate that mysterious yet interesting occupation.

Since these tables were first compiled in 1855 numerous imitators have sprung up, and the plan adopted is now common enough. But previously to their appearance I believe no one had ever attempted to fill a single table completely up to the sixth generation;

for though Mr. Goodwin and Mr. Youatt had published lengthy tables of Eclipse, the Darley and Godolphin Arabians, and the Byerly Turk, they were not filled up throughout, on account of the deficiencies in their pedigrees. The plan I then adopted can *now* always be easily carried out with the foundation afforded by the tables of 1855; but when I compiled the latter I had only the Stud Book to refer to, and unfortunately the copy I used was made up of the first three volumes as originally published, which were full of errors, since corrected by Messrs. Weatherby, which misled me in many cases in a proportional degree. These errors are, however, now corrected, and I believe the tables may be fully relied on.

TABLES OF PEDIGREES OF THOROUGH-BRED HORSES.

An Index of the names of the horses contained in these pedigrees will be found at the end of the Tables. The numbers appended to names of horses in "uncompleted" pedigrees indicate the Tables in which the continuation will be found; and where no number is given, reference may be made to the Index.

(1) MATCHEM (1748).

- MATCHEM (1748)
  - Cade (1734)
    - Godolphin Arabian
    - Roxana (1718)
      - Bald Galloway (1705)
        - St. Victor's Barb
        - Daughter of
          - Why Not, by Fenwick Barb
          - Royal Mare
      - Sister to Chanter
        - Akaster Turk
        - Daughter of
          - Leedes Arabian
          - Daughter of Spanker (*below*)
  - Partner (1718) (Sis. to Miss Partner (1735))
    - Jigg
      - Byerly Turk
      - Daughter of Spanker
        - D'Arcy's Yellow Turk
        - Daughter of
          - Morocco Barb
          - Bald Peg
            - An Arab
            - Barb Mare
    - Sister to Mixbury
      - Curwen's Bay Barb
      - Daughter of
        - Old Spot, by Selaby Turk
        - Daughter of
          - Whitelegged Lowther Barb
          - Vintner Mare
  - Sis. to Miss Partner (1735)
    - Brown Farewell
    - Daughter of
      - Makeless, by Oglethorpe Arabian
      - Brimmer
        - D'Arcy's Yellow Turk
        - Royal Mare
      - Trumpet's Dam
        - Place's White Turk
        - Daughter of
          - Dodsworth Barb
          - Layton Barb Mare

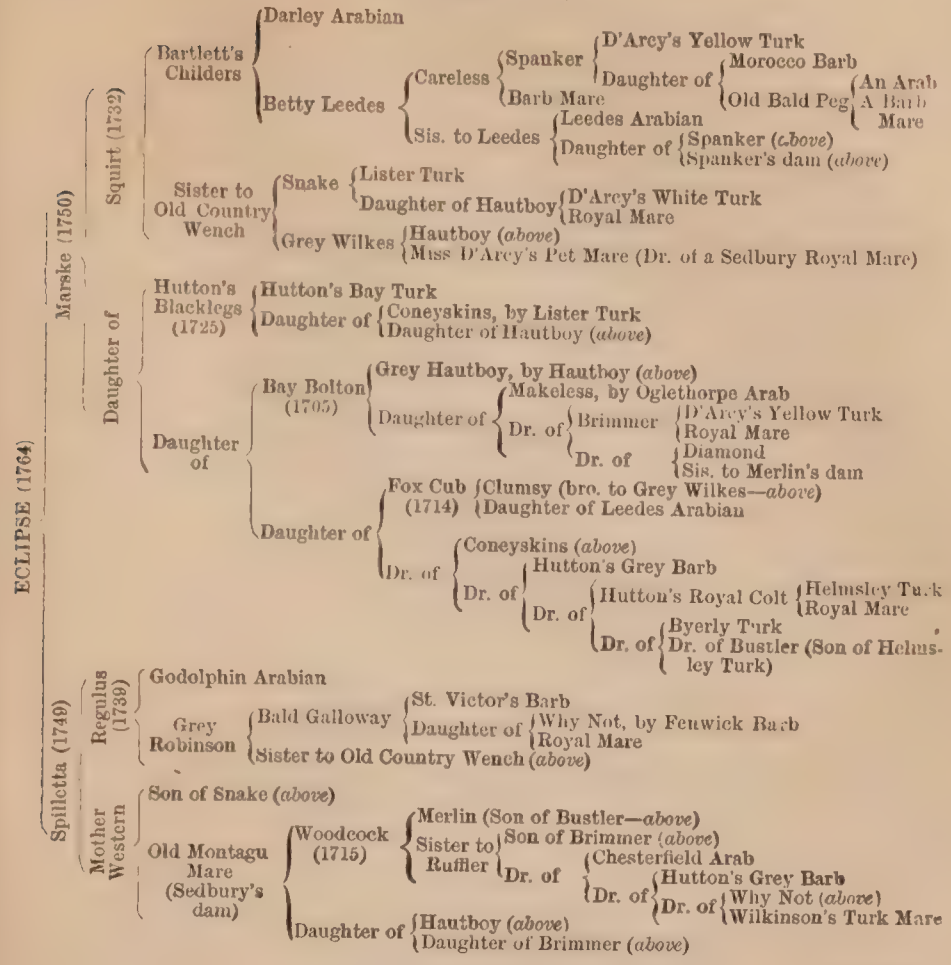
(2) HEROD (1758).

- HEROD (1758)
  - Tartar (1743)
    - Partner (1718)
      - Jigg
        - Byerly Turk
        - Daughter of Spanker
          - D'Arcy's Yellow Turk
          - Daughter of
            - Morocco Barb
            - Bald Peg
              - An Arab
              - Barb Mare
      - Sister to Mixbury
        - Curwen's Bay Barb
        - Daughter of
          - Old Spot, by Selaby Turk
          - Daughter of
            - White legged Lowther Barb
            - Vintner Mare
    - Meliora (1729)
      - Fox (1714)
        - Clumsy
          - Hautboy
            - D'Arcy's White Turk
            - Royal Mare
          - Miss D'Arcy's Pet Mare (Dr. of Sedbury Royal Mare)
        - Bay Peg
          - Leedes Arabian
          - Y. Bald Peg
            - Leedes Arabian
            - Morocco Mare (Spanker's dam, *above*)
      - Milkmaid
        - Snail
        - Shields Galloway
  - Cyprus (1750)
    - Blaze (1733)
      - Childers (1715)
        - Darley Arabian
        - Betty Leedes
          - Careless
            - Spanker (*above*)
            - Barb Mare
          - Sister to Leedes
            - Leedes Arabian
            - Daughter of
              - Spanker (*above*)
              - Spanker's dam (*above*)
      - Confederate Filly
        - Grey Grantham, by Brownlow Turk
        - Daughter of
          - Rutland Black Barb
          - Bright's Roan Arab Mare
    - Selima (1733)
      - Bethell's Arabian
      - Daughter of
        - Graham's Champion (1707)
          - Harpur's Arabian
          - Daughter of Hautboy (*above*)
        - Daughter of
          - Darley Arabian
          - Daughter of
            - Merlin
              - ——
              - ——
            - Helmsley Turk

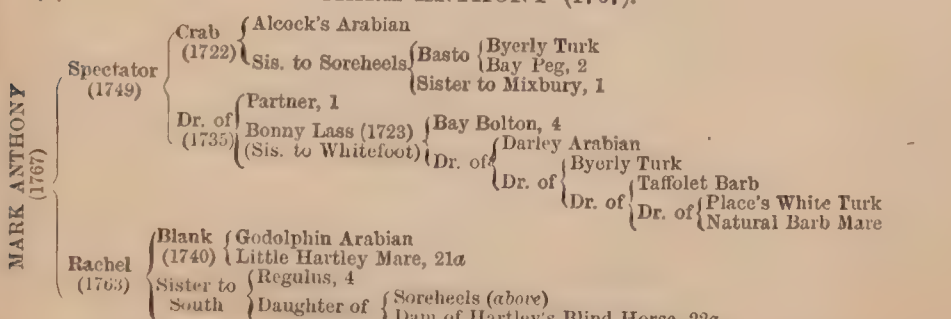
(3) MISS RAMSDEN—*Dam of* WOODPECKER (1773), *by Herod.*[2]

- MISS RAMSDEN (1752)
  - Cade, 1
  - Daughter of
    - Lonsdale Bay Arabian
    - Bonny Lass, 5

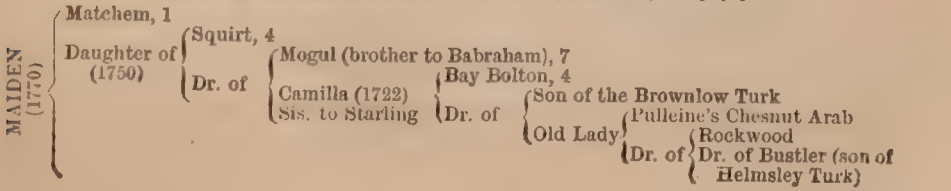
(4) ECLIPSE (1764).



(5) MARK ANTHONY (1767).



(5a) MAIDEN—*Sister to* RANTHOS (1763) and RIDDLE (1765); *and Dam of* MATRON (1782) *by Florizel,*[9] *and of* WALNUT (1786), *by Highflyer.*[17]



(6) CONDUCTOR (1767)—*Brother to* ALFRED (1770).

CONDUCTOR (1767) { Matchem, 1 / Daughter of (1762) { Snap, 11*a* / Daughter of { Cullen Arabian / Grisewood's Lady Thigh, 24*a* } } }

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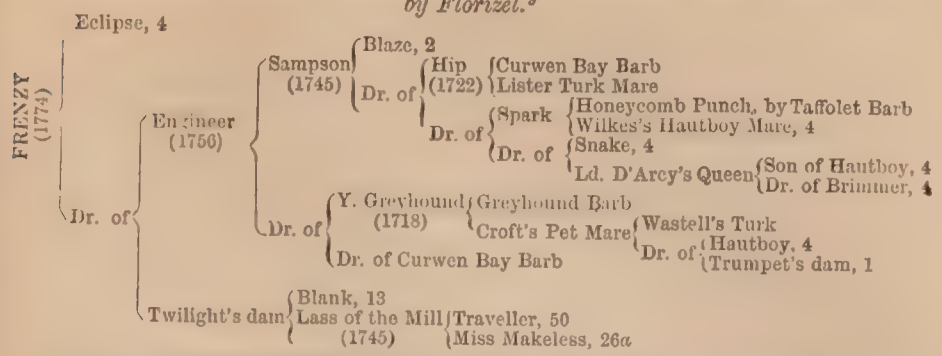
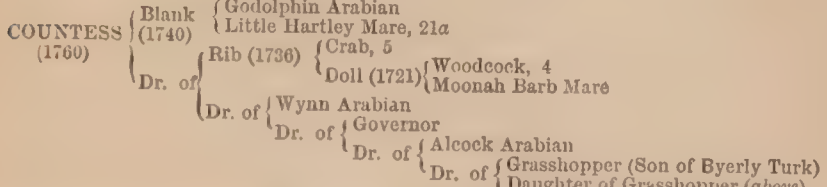
(7) BOUDROW (1777).

BOUDROW (1777) { Eclipse, 4 / Dr. of (1765) { Sweeper { Sloe { Crab, 5 / Dr. of { Childers, 2 / Mermaid (1720) { Sutton Turk / Dr. of { Basto, 5 / Dr. of { Makeless, 1 / Sister to Honeycomb / Punch } } } } } / Dr. of { Mogul (*below*) / Dr. of { Partner, 1 / Dr. of Coneyskins, 4 } } } / Old Tartar Mare { Tartar, 2 / Dr. of { Mogul (brother to Babraham) { Godolphin Arabian / Large Hartley Mare, 22*a* } / Dr. of { Sweepstakes (1749) { Gower Stallion (1740) { Godolphin Arabian / Sister to Tortoise, 48 } / Daughter of (1731) { Partner, 1 / Brown Farewell, 1 } } / Dr. of { Bay Bolton, 4 / Sister to Mixbury, 1 } } } } }

(12) FRENZY—*Dam of* PHENOMENON (1780), *by Herod*;[2] *and of* LUCY (1789), *by Florizel.*[9]

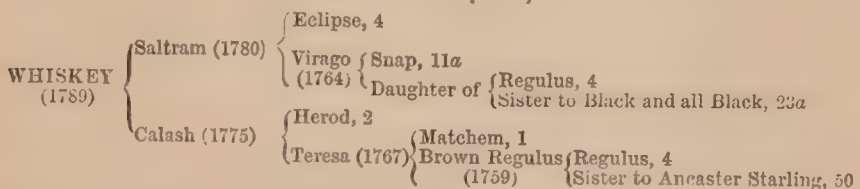


(13) COUNTESS (1760)—*Dam of* DELPINI (1781), *by Highflyer*;[17] *and of* HORATIA (1778), *by Eclipse.*[4]

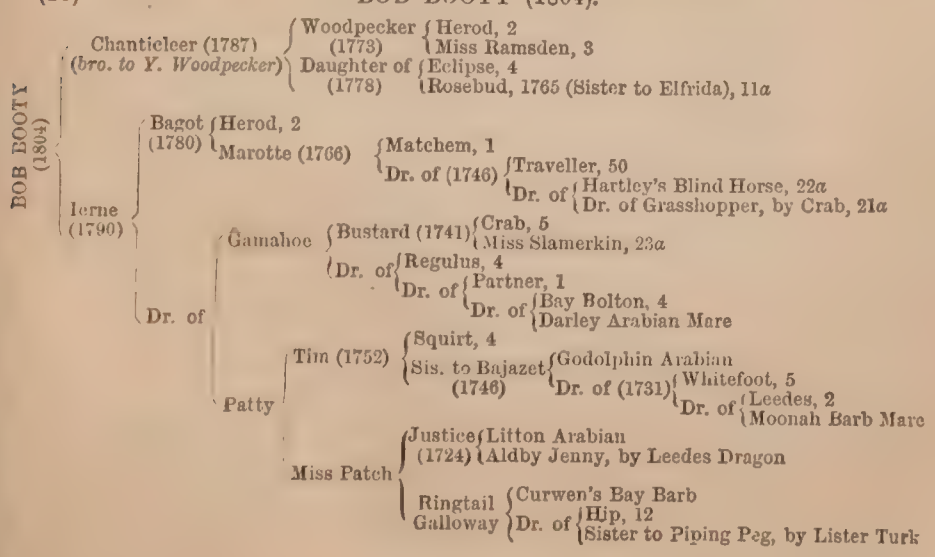


(14) CHAUNTER (1782).

(15) WHISKEY (1789).



(16) BOB BOOTY (1804).



(17) PLENIPOTENTIARY (1831),

EMILIUS, ORVILLE, PERICLES, BENINGBROUGH, STAMFORD, PRECIPITATE, HIGHFLYER, EVANDER, &c.

PLENIPOTENTIARY (1831)	Emilius (1820)	Orville (1799)	Beningbrough (1791)	King Fergus (1775)	Eclipse (1764)	Marske, 4
					Polly (1756)	Spilletta, 4
				Daughter of (1780)	Herod (1758)	Black & all Black,
					Pyrrha (1771)	Fanny,
			Evelina (1791)	Highflyer (1774)	Herod (1758)	Tartar, 2
					Rachel (1750)	Cypron, 2
				Termagant (1772)	Tantrum (1760)	Matchem, 1
					Cantatrice	Duchess,
		Emily (1810)	Stamford (1794)	Sir Peter (1784)	Highflyer (1774)	Tartar, 2
					Papillon (1769)	Cypron, 2
				Horatia (1778)	Eclipse (1764)	Blank,
					Countess (1760)	Sis. to South,
			Daughter of (1799)	Whiskey (1789)	Saltram (1780)	Cripple,
					Calash (1775)	H. Ct. Childers Mare.
				Grey Dorimant (1781)	Dorimant (1772)	Sampson, 12
					Dizzy (1757)	Regulus Mare.
	Harriet (1819)	Pericles (1810)	Evander (1801)	Delpini (1781)	Highflyer (1774)	Herod, *above*
					Countess (1760)	Rachel, *above*
				Caroline (1793)	Phenomenon (1780)	Snap,
					Faith (1779)	Miss Cleveland,
			Daughter of (1790)	Precipitate (1787) (*bro. to Gohanna*)	Mercury (1778)	Marske, 4
					Daughter of (1770)	Spilletta, 4
				Sis. to Osprey	Highflyer (1774)	Blank,
					Daughter of (1774)	Rib Mare, 13
		Daughter of (1812)	Selim (1802)	Buzzard (1787)	Woodpecker (1773)	Eclipse, *above*
					Misfortune (1775)	Virago, 15
				Daughter of (1790)	Alexander (1782)	Herod, *above*
					Daughter of	Teresa, 15
			Pipylina (1803)	Sir Peter (1784)	Highflyer (1774)	Otho,
					Papillon (1769)	Badraham Mare.
				Rally (1790)	Trumpator (1782)	Blank,
					Fancy (1780) (*sis. to Diomed*)	Ancaster Dizzy.

(17*a*) LEAMINGTON (1853).

LEAMINGTON (1853)

- Daughter of (1841)
  - Faugh-a-Ballagh (brother to Birdcatcher, 29)
  - Pantaloon, 30
- Dapline (1837)
  - Laurel, 56
- Maid of Honour (1829)
  - Champion (1812)
    - Selim, 27
    - Potagra (1805)
      - Gouty, 60
      - Jet (1785)
        - Magnet (1770)
          - Herod, 2
          - Cassandra (1756)
            - Blank, 21*a*
            - Sis. to Snap, 61*a*
        - Jewel (1775)
          - Squirrel, 50
          - Sophia (1764),
            - Blank, 21*a*
            - Diana, 42*a*
  - Etiquette (1820)
    - Orville, 17
    - Boadicea, 38

(18)

HARKAWAY (1834),

Economist, Nabocklish, Octavian, Rugantino.

HARKAWAY (1834)	Economist (1815)	Whisker (1812)	Waxy (1790)	Pot 8 os (1773)	Eclipse, 4	
				Maria (1777)	Sportsmistress,	
			Penelope (1798)	Trumpator (1782)	Herod, 2	
				Prunella (1788)	Lisette,	
		Floranthe (1810)	Octavian (1807)	Stripling (1795)	Conductor 6	
				Daughter of	Brunette,	
			Caprice (1797)	Anvil (1779)	Phenomenon, 12	
				Madcap (1774)	Laura,	
	Daughter of (1823)	Nabocklish (1810) *gt. plate-winner in Ireland.*	Rugantino (1803) *(bro. to Escape)*	Commodore (1793)	Oberon, 95	
				Buffer's dam (1791)	Sister to Sharper,	
			Butterfly	Bagot (1780)	Herod, 2	
				Mother Brown (1771)	Feather Mare, 11	
		Miss Tooley (1808)	Teddy the Grinder (1798)	Asparagus (1787)	Eclipse, 4	
				Stargazer (1782)	Blank Mare,	
			Lady Jane (1796)	Sir Peter (1784)	Tug,	
				Paulina (1778)	Smalthopes,	
					Highflyer, 17	
					Shift, by Sweetbriar,	
					Herod, 2	
					Marotte, 16	
					Trunnion, by Cade, 1	
					Modesty, by Aurelius	
					Pot 8 os, *above*	
					Dr. of Justice.	
					Highflyer, 17	
					Miss West, by Matchem, 1	
					Highflyer, 17	
					Papillon,	
					Florizel, 9	
					Captive, by Matchem, 1	

(19)

ALARM (1842),

Venison, Partisan, Walton, Whalebone, Defence, X Y Z.

ALARM (1842)	Venison (1833)	Partisan (1811)	Walton (1799)	Sir Peter (1784)	Highflyer, 17	
				Arethusa (1792)	Papillon,	
			Parasol (1800)	Pot 8 os (1773)	Dungannon,	
				Prunella (1788)	Prophet Mare,	
		Fawn (1823)	Smolensko (1810)	Sorcerer (1796)	Eclipse, 4	
				Wowski (1797)	Sportsmistress,	
			Jerboa (1803)	Gohanna (1790)	Highflyer, 17	
				Camilla (1778)	Promise,	
	Southdown (1836)	Defence (1824)	Whalebone (1807)	Waxy (1790)	Trumpator,	
				Penelope (1798)	Young Giantess.	
			Defiance (1816)	Rubens (1805)	Mentor,	
				Little Folly (1808)	Maria,	
		Feltona (1819)	X Y Z (1808)	Haphazard (1797)	Mercury, 8	
				Daughter of (1793	Precipitate's dam 7	
			Janetta (1803)	Beningbrough (1791)	Trentham,	
				Daughter of (1797)	Coquette.	
					Pot 8 os, *above*	
					Maria,	
					Trumpator,	
					Prunella, *above*	
					Buzzard,	
					Alexander Mare,	
					Highland Fling,	
					Harriet,	
					Sir Peter, *above*	
					Miss Hervey.	
					Spadille,	
					Sylvia,	
					King Fergus, 17	
					Herod Mare, 17	
					Drone,	
					Contessina,	

(19*a*)

THE PROMISED LAND (1856).

THE PROMISED LAND (1856)

- Jericho (1842)
  - Jerry, 36
  - Turquoise (1825)
    - Selim, 27
    - Pope Joan (sister to Waxy Pope, 100)
- Glee (1843)
  - Touchstone, 38
  - Harmony (1826)
    - Reveller, 47*a*
    - Dr. of (1815)
      - Orville, 27
      - Mirth (1806)
        - Trumpator, 50
        - Highflyer Mare, 17

(20) SWEETMEAT (1842),

GLADIATOR, PARTISAN, STARCH, WAXY POPE.

SWEETMEAT (1842)	Gladiator (1833)	Partisan (1811)	Walton (1799)	Sir Peter (1784)	Highflyer, 17
				Arethusa (1792)	Papillon,
			Parasol (1800)	Pot 8 os (1773)	Dungannon,
				Prunella (1788)	Prophet Mare,
		Pauline (1826)	Moses (1819)	Whalebone (1807) or Seymour (*see* 84)	Eclipse, 4
				Daughter of (1807)	Sportsmistress,
			Quadrille (1815)	Selim (1802)	Highflyer, 17
				Canary Bird (1806)	Promise,
	Lollypop (1836)	Starch (1819) or Voltaire (*see* 23)	Waxy Pope (1806)	Waxy (1790)	Waxy, *below*
				Prunella (1788)	Penelope, 27
			Miss Stavely (1805)	Shuttle (1793)	Gohanna, 24
				Daughter of (1793)	Grey Skim, 24
		Belinda (1825)	Blacklock (1814)	Whitelock (1803)	Buzzard, 39
				Daughter of (1799)	Alexander Mare,
			Wagtail (1818)	Prime Minister (1810)	Whiskey, 15, or Sorcerer
				Daughter of (1812)	Canary,

(21) COSSACK (1844),

HETMAN PLATOFF, BRUTANDORF, BLACKLOCK, PRIAM.

COSSACK (1844)	Hetman Platoff (1836)	Brutandorf (1821)	Blacklock (1814)	Whitelock (1803)	Hambletonian, 23
				Daughter of (1799)	Rosalind, 23
			Mundane (1800)	Pot 8 os (1773)	Coriander, 23
				Y. Camilla (1787)	Wildgoose, 23
		Daughter of (1820)	Comus (1809)	Sorcerer (1790)	Eclipse, 4
				Houghton Lass (1801)	Sportsmistress,
			Marciana (1809)	Stamford (1794)	Woodpecker,
				Marcia (1797)	Camilla,
	Joannina (1835)	Priam (1827)	Emilius (1820)	Orville (1799)	Trumpator,
				Emily (1810)	Young Giantess, *below*
			Cressida (1807) (*sis. to Eleanor*)	Whiskey (1789)	Sir Peter, 58
				Y. Giantess (1790)	Alexina, 78
		Joanna (1830)	Sultan (1816)	Selim (1802)	Sir Peter,
				Bacchante (1809)	Horatia, 17
			Filagree (1815)	Soothsayer (1808)	Coriander, 23
				Web (1808)	Faith,

Beningbrough, 17
Evelina, 17

Stamford, *above*
Whiskey Mare, 17

Saltram, 15
Calash, 15

Diomed, 9
Giantess,

Buzzard,
Alexander Mare,

Williamson's Ditto, 27
Sister to Calomel, 27

Sorcerer, *above*
Goldenlocks, 27

Waxy, 27
Penelope, 27

(21*a*) RACHEL—*Sister to* RUTH *and* RUTILIA; *and Dam of* HIGHFLYER (1774), *by Herod*,[2] *and of* MARK ANTHONY (1767), *by Spectator*.[5]

RACHEL (1763)

- Blank (1740) (*bro. to Janus and Old England*)
  - Godolphin Arabian
  - Little Hartley Mare
    - Bartlett's Childers, 4
    - Flying Whig (1731)
      - Woodstock Arabian
      - Points
        - St. Victor's Barb
        - Why Not Mare, 1
- Sister to South (1751)
  - Regulus, 4
  - Daughter of
    - Sorcheels, 5
    - Hartley's Blind Horse's dam, 22*a*

(22) VAN TROMP (1844),

BARBELLE—*Dam of* THE FLYING DUTCHMAN (1846) *and* VANDERDECKEN (1850), *by Bay Middleton;*[7] *of* ZUYDER ZEE (1854), *by Orlando;*[24] *and of* VAN DIEMEN (1856), *by West Australian.*[28]

VAN TROMP (1844), (*Brother to De Ruyter*, 1848)	Barbelle (1839)	Lanercost (1835)	Liverpool (1828)	Tramp (1810)	Dick Andrews (1797)	Joe Andrews (1778)	Eclipse, 4 Amaranda,
						Daughter of (1790)	Highflyer, 17 Cardinal Puff M.,
					Daughter of (1805)	Gohanna (1790)	Mercury, 8 Herod Mare, 33
						Fraxinella (1793)	Trentham, Sis. to Goldfinch,
				Daughter of (1822)	Whisker (1812)	Waxy (1790)	Pot 8 os, 27 Maria, 27
						Penelope (1798)	Trumpator, 27 Prunella, 27
					Mandane (1809)	Pot 8 os (1773)	Eclipse, 4 Sportsmistress,
						Y. Camilla (1787)	Woodpecker, 39 Camilla,
			Otis (1809)	Bustard (1801)	Buzzard (1787)	Woodpecker (1773)	Herod, 2 Miss Ramsden,
						Misfortune (1775)	Dux, Curiosity,
					Gipsy (1789)	Trumpator (1782)	Conductor, 6 Brunette,
						Sis. to Postmaster (1774)	Herod, 2 Snap Mare,
				Daughter of (1815)	Election (1804)	Gohanna (1790)	Mercury, 8 Herod Mare, 33
						Chesnut Skim (1794)	Woodpecker, 39 Silver's dau., 24
					Sister to Sky-sweeper	Highflyer (1774)	Herod, 2 Rachel,
						Daughter of (1778)	Eclipse, 4 Rosebud, 16
			Sandbeck (1818)	Catton (1809)	Columnus (1802)	Gohanna (1790)	Mercury, 8 Herod Mare, 33
						Catherine (1795)	Woodpecker, 39 Camilla,
					Lucy Gray (1804)	Timothy (1794)	Delpini, 13 Cora,
						Lucy (1789)	Florizel, 9 Frenzy, 12
				Orvillina (1804) (*sister to Orville*)	Beningbrough (1791)	King Fergus (1775)	Eclipse, 4 Polly,
						Daughter of (1780)	Herod, 2 Pyrrha, 17
					Evelina (1741)	Highflyer (1774)	Herod, 2 Rachel,
						Termagant (1772)	Tantrum, Cantatrice,
			Darioletta (1842)	Amadis (1807)	Don Quixote (1784) (*bro. to Alexander and Xantippe*)	Eclipse (1764)	Marske, 4 Spilletta, 4
						Grecian Princess (1770)	Wms.'s Forester, Coalition Colt M.
					Fanny (1798)	Sir Peter (1784)	Highflyer, 17 Papillon,
						Daughter of (1778)	Diomed, 9 Desdemona,
				Selima (1810)	Selim (1802)	Buzzard (1787)	Woodpecker, 39 Misfortune,
						Daughter of (1790)	Alexander, 75 Highflyer Mare,
					Daughter of (1794)	Pot 8 os (1773)	Eclipse, 4 Sportsmistress,
						Editha (1781)	Herod, 2 Elfrida,

(22*a*) GIANTESS—*Dam of* YOUNG GIANTESS (1790), *by Diomed;*[9] *and of* PHARAMOND (1781), *by Highflyer.*[17]

GIANTESS (1769) — Matchem, 1 — Molly Longlegs (1753) — Babraham (1740) — Large Hartley Mare — Godolphin Arabian — Hartley's Blind Horse — Holderness Turk — Milbank's — Makeless, 1 — Black Mare — D'Arcy Royal Mare — Flying Whig, 21*a*

Molly Longlegs (1753) — Daughter of — Cole's Foxhunter (1727) — Brisk (son of Darley Arabian) — Rutland Brown Betty (sis. to Old Ebony, 61)

Daughter of — Sister to Cato — Partner, 1 — Sister to Roxana, 1

(23) VOLTIGEUR (1847),

Brother to BARNTON (1841), VOLLEY (1845), VIVANDIÈRE (1848), *and* VORTEX (1849).

VOLTIGEUR (1847)	Voltaire (1826)	Blacklock (1814)	Whitelock (1805)	Hambletonian (1792)	King Fergus (1775)	Eclipse, 4
					Daughter of (1782)	Polly, 59
				Rosalind (1788)	Phenomenon (1780)	Highflyer, *below*
					Atalanta (1769)	Monimia, 41
			Daughter of (1799)	Coriander (1786)	Pot 8 os (1775)	Herod, 2
					Lavender (1778)	Frenzy, 12
				Wildgoose (1792)	Highflyer (1774)	Matchem, 1
					Coheiress (1786)	Lass of the Mill,
		Daughter of (1810)	Phantom (1808)	Walton (1793)	Sir Peter (1784)	Eclipse, 4
					Arethusa (1792)	Spectatrix,
				Julia (1799)	Whiskey (1789)	Herod, 2
					Y. Giantess (1790)	Frenzy,
			Daughter of (1802)	Overton (1788)	King Fergus (1775)	Matchem, 1
					Daughter of (1774)	Lass of the Mill,
				Gratitude's dam (1796)	Walnut (1780)	Eclipse, 4
					Daughter of (1786)	Polly,
	Martha Lynn 1837)	Mulatto (1823)	Catton (1809)	Gohanna (1790)	Mercury, 8	
					Catherine (1795)	Herod Mare, 33
				Lucy Gray (1804)	Timothy (1794)	Delpini, 13
					Lucy (1789)	Matchem Mare, 1
			Desdemona (1811)	Orville (1799)	Beningbrough (1791)	Florizel, 9
					Evelina (1791)	Frenzy, 12
				Fanny (1796)	Sir Peter (1784)	K. Fergus, *above*
					Daughter of (1788)	Herod Mare, 17
		Leda (1824)	Filho da Puta (1812)	Haphazard (1797)	Sir Peter (1784)	Highflyer, *above*
					Miss Hervey (1775)	Termagant,
				Mrs. Barnet (1806)	Waxy (1790)	Highflyer, *above*
					Daughter of (1788)	Papillon,
			Treasure	Camillus (1803)	Hambletonian (1792)	Diomed, 9
					Faith (1779)	Desdemona,
				Daughter of (1804)	Hyacinthus (1797)	Highflyer, *above*
					Flora (1783)	Papillon,
						Eclipse, 4
						Clio, 65
						Pot 8 os, *above*
						Maria,
						Woodpecker, 39
						Heinel, 38
						K. Fergus, *above*
						Highflyer Mare, *above*
						Pacolet,
						Atalanta, *above*
						Coriander, *above*
						Rosalind, *above*
						K. Fergus, *above*
						Atalanta, *above*

(23*a*) POLLY—*Dam of* KING FERGUS (1775), *by Eclipse*.[4]

POLLY (1756)
- Black and all Black (1743)
  - Crab, 5
  - Miss Slamerkin (1729)
    - Y. True Blue (1718)
      - Williams's Turk
      - Byerly Turk Mare
    - Daughter of
      - Lord Oxford's Dun Arab
      - D'Arcy Blacklegged Royal Mare
- Fanny (1751)
  - Tartar, 2
  - Daughter of
    - Starling (brother to Camilla, 5*a*)
    - Daughter of
      - Childers, 2
      - Daughter of
        - Grantham, by the Brownlow Turk
        - Dr. of
          - Wilkinson's Barb
          - Bald Peg
            - An Arab
            - A Barb Mare

(24) TEDDINGTON (184

ORLANDO, TOUCHSTONE, CAMEL, VULTURE, ROCKINGHAM, LANGAR, AND ELECTION.

TEDDINGTON (1838)	Orlando (1841)	Touchstone (1831)	Camel (1822)	Whalebone (1807)	Waxy (1790)	Pot 8 Os, 27
					Penelope (1798)	Maria,
				Daughter of (1812)	Selim (1802)	Trumpator, *below*
					Maiden (1801)	Pruncilla,
			Banter (1826)	Master Henry (1815)	Orville (1799)	Buzzard, *below*
					Miss Sophia (1805)	Alexander Mare, *below*
				Boadicea (1807)	Alexander (1782)	Sir Peter, *below*
					Brunette	Phenomenon Mare, 12
		Vulture (1833)	Langar (1817)	Selim (1802)	Buzzard (1787)	Beningbrough, 17
					Daughter of (1790)	Evelina, 77
				Daughter of (1808)	Walton (1799)	Stamford, *below*
					Y. Giantess (1790)	Sophia,
			Kite (1821)	Bustard (1813)	Castrel (1801)	Eclipse, 4
					Miss Hap (1804)	Grecian Princess,
				Olympia (1815)	Sir Oliver (1800)	Amaranthus, 38
					Scotilla (1795)	Mayfly, 38
		Rockingham (1830)	Humphrey Clinker (1822)	Colonus (1809)	Sorcerer (1796)	Woodpecker, *below*
					Houghton Lass	Misfortune, 39
				Clinkerina (1812)	Clinker (1805)	Alexander,
					Pewet (1786)	Highflyer M.
			Medora (1813)	Swordsman (1797)	Prizefighter (1784)	Sir Peter, *below*
					Zara (1784) *(sis. to Isabella)*	Arethusa,
				Daughter of (1797)	Trumpator (1782)	Diomed, 9
					Peppermint (1787) *(sis. to Prunella)*	Giantess,
	Miss Twickenham (1838)	Electress (1810)	Election (1804)	Gohanna (1790)	Mercury (1778)	Buzzard, *above*
					Daughter of (1779)	Alexander M. *above*
				Chesnut Skim *(s. to Grey Skim)* (1794)	Woodpecker (1773)	Shuttle, 23
					Silver's dam (1780)	Sis. to Haphazard, 38
			Daughter of (1805)	Stamford (1794)	Sir Peter (1784)	Sir Peter, *below*
					Horatia (1778)	Fanny, 40
				Miss Judy (1784)	Alfred (1770)	Anvil, 11
					Manilla (1777)	Scota, 40

(24*a*) PRINCIPESSA—*Dam of* HEINEL (1771), *by Squirrel.*[30]

PRINCIPESSA (1762) { Blank, 21*a*
Daughter of (1749) { Cullen Arabian
Grisewood's Lady Thigh (1731) { Partner, 1
Daughter of (1719) { Greyhound (Barb)
Sophonisba's dam { Curwen Bay Barb
D'Arcy Arab Mare

(24*b*) FOLLY (1764).

FOLLY (1764) { Blank, 21*a*
Sister to Regulus, 4

(25) **ELY (1861),**

KINGSTON, VENISON, PARTISAN, SLANE, SMOLENSKO, WALTON, GOHANNA.

ELY (1861)	Kingston (1849)	Venison (1834)	Partisan (1811)	Walton (1799)	Sir Peter (1784)	Highflyer, 17 Papillon,
					Arethusa (1792)	Dungannon, Prophet Mare,
				Parasol (1800)	Pot 8 os (1778)	Eclipse, 4 Sportsmistress,
					Prunella (1788)	Highflyer, 17 Promise,
			Fawn (1823)	Smolensko (1810)	Sorcerer (1790)	Trumpator, Y. Giantess,
					Wowski (1797)	Mentor, Maria,
				Jerboa (1803)	Gohanna (1790)	Mercury, 8 Herod Mare,
					Camilla (1778)	Trentham, Coquette,
		Queen Anne (1843)	Slane (1833)	Royal Oak (1823)	Catton (1809)	Golumpus, *below* Lucy Gray, 22
					Daughter of (1818)	Smolensko, *above* Lady Mary, 43
				Daughter of (1819)	Orville (1799)	Beningbrough, 17 Evelina,
					Epsom Lass	Sir Peter, *above* Alexina,
			Garcia (1823)	Octavian (1807)	Stripling (1795)	Phenomenon, 12 Laura, 95
					Daughter of	Oberon, Sister to Sharper,
				Daughter of (1809)	Shuttle (1793)	Y. Marske, Vauxhall Snap Mare,
					Katherine (1798)	Delpini, 13 Paymaster Mare, 142
	The Bloomer (1850)	Melbourne (1834)	Humphrey Clinker (1822)	Comus (1809)	Sorcerer (1790)	Trumpator, Y. Giantess,
					Houghton Lass (1801)	Sir Peter, *above* Alexina,
				Clinkerina (1812)	Clinker (1805)	Sir Peter, *above* Hyale, 28
					Pewet (1786)	Tandem, Termagant,
			Daughter of (1825)	Cervantes (1800)	Don Quixote (1784)	Eclipse, 4 Grecian Princess,
					Evelina (1791)	Highflyer, 17 Termagant,
				Daughter of (1818)	Golumpus (1802)	Gohanna, *above* Catherine, 22
					Daughter of (1810)	Paynator, Sister to Zodiac,
		Lady Sarah (1845)	Velocipede (1825)	Blacklock (1814)	Whitelock (1803)	Hambletonian, 23 Rosalind, 41
					Daughter of	Coriander, 23 Wild Goose, 23
				Daughter of (1817)	Juniper (1805)	Whiskey, 15 Jenny Spinner, 41
					Daughter of (1810)	Sorcerer, *above* Virgin, 41
			Lady Moore Carew (1830)	Tramp (1810)	Dick Andrews (1797)	Joe Andrews, 22 Highflyer Mare, 22
					Daughter of (1803)	Gohanna, *above* Fraxinella, 23
				Kite (1821)	Bustard (1813)	Castrel, 24 Miss Hap, 24
					Olympia (1815)	Sir Oliver, 24 Scotilla, 24

(25*a*) PRUNELLA – *Dam of* PENELOPE (1798) *and* PAWN (1808), *by Trumpator* ;[50] *of* PARASOL (1800), *by Pot-8-os* ;[63] *of* PIONEER (1804), *by Whiskey* ;[15] *of* WAXY POPE (1806), PLEDGE (1807), POPE JOAN (1809), *and* PRUDENCE (1811), *by Waxy* ;[27] *and of* PIQUET (1810), *by Sorcerer*.[26]

PRUNELLA (1788) { Highflyer (1774) { Herod, 2 / Rachel, 21*a* } / Promise (1768) { Snap, 61*a* / Julia (1756) { Blank, 21*a* / Spectator's dam, 5 } } }

(26) BLUE GOWN (1865)—*Brother to* BLUE GARTER (1863),

BEADSMAN, WEATHERBIT, SHEET ANCHOR, MENDICANT, LADY MOORE CAREW, VAT.

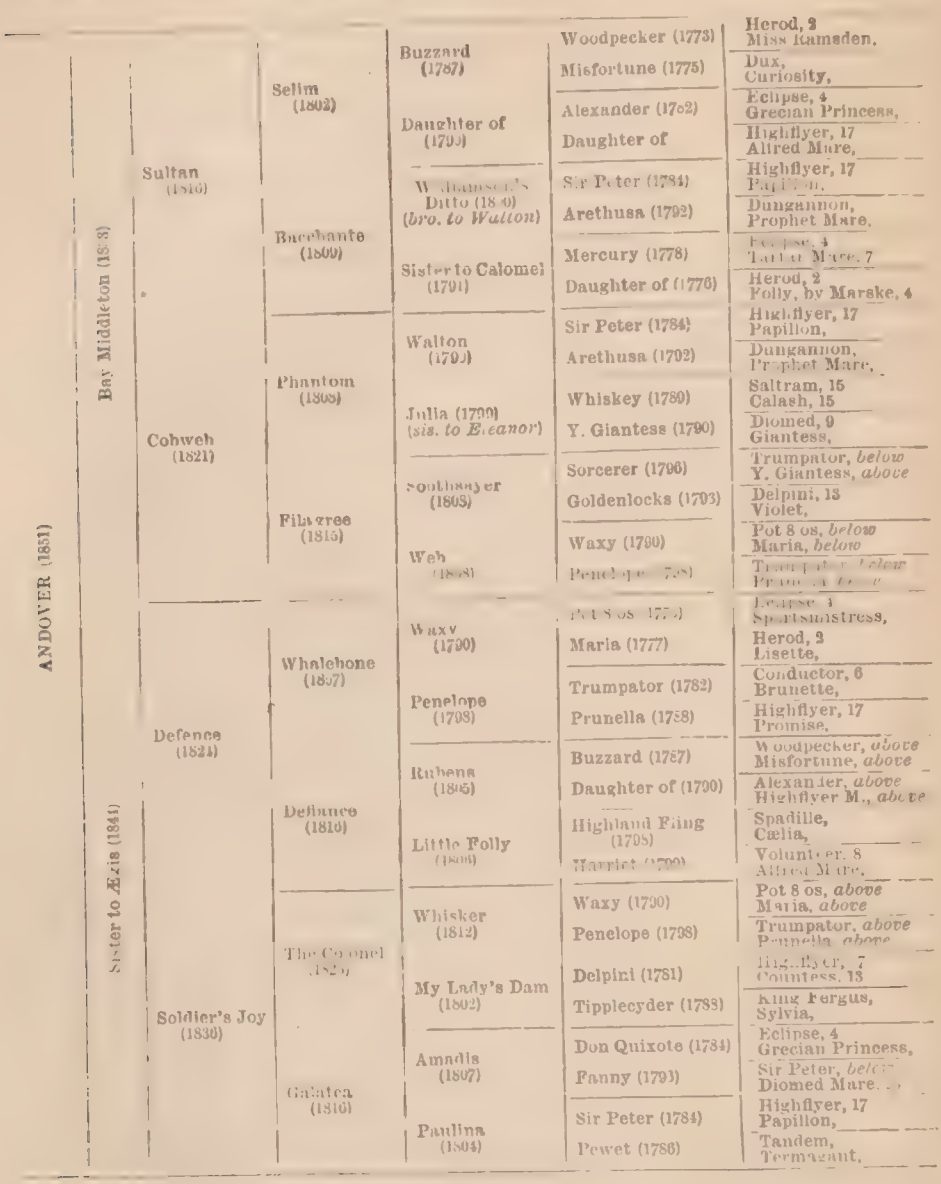
BLUE GOWN (1865)	Beadsman (1855)	Weatherbit (184)	Sheet Anch (1832)	Lottery (1820)	Tramp (1810)	Dick Andrews, *below*
						Gohanna Mare, *below*
					Mandane (1800)	Pot 8 os,
						Y. Camilla,
				Morgiana (1820)	Muley (1810)	Orville, *below*
						Eleanor, *below*
					Miss Stephenson (1814)	Scud, 41, or Sorcerer, 28
						Sister to Petworth,
			Miss Letty (1834)	Priam (1827)	Emilius (1820)	Orville, *below*
						Emily 17
					Cressida (1807) (*sis to Eleanor*)	Whiskey, 15
						Y. Giantess,
				Miss Fanny's Dam (1815)	Orville (1799)	Beningbrough, 17
						Evelina, 17
					Daughter of (1800)	Buzzard, 39
						Hornpipe,
		Mendicant (1843)	Touchstone (1831)	Camel (1822)	Whalebone (1807)	Waxy, *below*
						Penelope, *below*
					Daughter of (1812)	Selim, *below*
						Maiden, 38
				Banter (1826)	Master Henry (1815)	Orville, *above*
						Miss Sophia,
					Boadicea (1807)	Alexander,
						Brunette, 38
			Lady Moore Carew (18[illegible])	Tramp (1810)	Dick Andrews (1797)	Joe Andrews, 22
						Highflyer Mare, 22
					Daughter of (1803)	Gohanna, 22
						Fraxinella, 22
				Kite (1821)	Bustard (1813)	Castrel, 24
						Miss Hap, 24
					Olympia (1815)	Sir Oliver, 24
						Scotilla, 24
	Bas Bleu (1858)	Stockwell (1849)	The Baron (184[illegible])	Birdcatcher (1833)	Sir Hercules (1820)	Whalebone, *below*
						Peri, 29
					Guiccioli (1823)	Bob Booty, 29
						Flight, 29
				Echidna (1838)	Economist (1825)	Whisker, *below*
						Floranthe, 18
					Miss Pratt (1825)	Blacklock, 23
						Gadabout, 33
			Pocahontas (1837)	Glencoe (1831)	Sultan (1816)	Selim, *below*
						Bacchante, 27
					Trampoline (1825)	Tramp, *above*
						Web, *below*
				Marpessa (1830)	Muley (1810)	Orville, *above*
						Eleanor, *above*
					Clare (1824)	Marmion, 33
						Harpalice, 33
		Vexation (1845)	Touchstone (1831)	Camel (1822)	Whalebone (1807)	Waxy, *below*
						Penelope, *below*
					Daughter of (1812)	Selim, *below*
						Maiden, 38
				Banter (1826)	Master Henry (1815)	Orville, *above*
						Miss Sophia,
					Boadicea (1807)	Alexander,
						Brunette, 38
			Vat (1826)	Langar (1817)	Selim (1802)	Buzzard, 40
						Alexander Mare, 40
					Daughter of (1808)	Walton 40
						Y Giantess, 40
				Wire (1811) (*sis to Whalebone, Whisker, and Web*)	Waxy (1790)	Pot 8 os, 38
						Maria, 38
					Penelope (1798)	Trumpator, 38
						Prunella, 38

(26a) MISS MAKELESS—*Dam of* LASS OF THE MILL (1745), *by Old Traveller.*[50]

MISS MAKELESS (1737)
- Son of
  - Greyhound Barb
  - Brown Farewell, 1
- Dr. of (1731)
  - Partner, 1
  - Brown Woodcock
    - Woodcock, 4
    - Lusty Thornton
      - Croft's Bay Barb
      - Chesnut Thornton
        - Makeless, 1
        - Old Thornton
          - Brimmer, 2
          - Dr. of
            - Dicky Pearson, by Dodsworth Barb
            - Burton Barb Mare

(27) ANDOVER (1851),

BAY MIDDLETON, SULTAN, COBWEB, DEFENCE, SELIM, BACCHANTE, PHANTOM, &c.



(27*a*) FAITH *Dam of* CALEDONIA (1793), *by Pinchem*[1] *dam of* MARIA (1797), *by Coriander*.[23]

FAITH (1779)
- Pacolet (1763)
  - Blank, 21*a*
  - Whiteneck (1751)
    - Crab, 5
    - Daughter of
      - Godolphin Arabian
      - Daughter of
        - Conyer's Arabian
        - Sister to Mixbury, 1
- Atalanta (1769)
  - Matchem, 1
  - Lass of the Mill (1756)
    - Oronooko, 63
    - Sister to Clark's
      - Old Traveller, 50
      - Lass of the Mill
        - Miss Makeless, 26*a*

(28) **WEST AUSTRALIAN (1850),**

COTHERSTONE, MELBOURNE, HUMPHREY CLINKER, CERVANTES, WHISKER, &c.

WEST AUSTRALIAN (1850)	Melbourne (1834)	Humphrey Clinker (1822)	Comus (1809)	Sorcerer (1795)	Trumpator (1782)	Conductor, 6
					Y. Giantess (1790)	Brunette, *below*
				Houghton Lass (1801)	Sir Peter (1784)	Diomed, 9
					Alexina (1788)	Giantess,
			Clinkerina (1815)	Clinker (1805)	Sir Peter (1784)	Highflyer, *below*
					Hyale (1797)	Papillon,
				Pewet (1786)	Tandem (1773)	Phenomenon, 12
					Termagant (1772)	Rally, 17
		Daughter of (1825)	Cervantes (1809)	Don Quixote (1784)	Eclipse (1764)	Syphon,
					Grecian Princess (1770)	Regulus Mare,
				Evelina (1791)	Highflyer (1774)	Tantrum,
					Termagant (1772)	Cantatrice,
			Daughter of (1818)	Columnus (1802)	Gohanna (1790) (*bro. to Precipitate*)	Marske, 4
					Catherine (1795)	Spilletta, 4
				Daughter of (1810)	Paynator (1791)	Wm.'s Forester,
					Sister to Zodiac	Coalition Colt Mare,
	Mowerina (1843) (*sister to Cotherstone*)	Touchstone (1831)	Camel (1822)	Whalebone (1807)	Waxy (1790)	Herod, 2
					Penelope (1798)	Rachel,
				Daughter of (1812)	Selim (1802)	Tantrum,
					Maiden (1801)	Cantatrice,
			Banter (1826)	Master Henry (1815)	Orville (1799)	Mercury, 8
					Miss Sophia (1805)	Herod Mare,
				Boadicea (1807)	Alexander (1782)	Woodpecker, 39
					Brunette (1771)	Camilla,
		Emma (1824)	Whisker (1812)	Waxy (1790)	Pot 8 os (1773)	Trumpator,
					Maria (1777)	Mark Anthony Mare, 5
				Penelope (1798)	Trumpator (1782)	St. George,
					Prunella (1788)	Abigail,
			Gibside Fairy (1811)	Hermes (1790)	Mercury (1778)	Pot 8 os, *below*
					Rosina 1783)	Maria, *below*
				Vicissitude (1800)	Pipator (1780)	Trumpator, *below*
					Beatrice (1791)	Prunella, *below*
						Buzzard, 39
						Alexander Mare,
						Sir Peter, *above*
						Phenomenon Mare, 12
						Beningbrough, 17
						Evelina, 17
						Stamford, 17
						Sophia,
						Eclipse, *above*
						Grecian Princess, *above*
						Amaranthus, 38
						Mayfly, 38
						Eclipse, *above*
						Sportsmistress,
						Herod, 2
						Lisette,
						Conductor, 6
						Brunette, *above*
						Highflyer, *above*
						Promise,
						Eclipse, *above*
						Tartar Mare, 7
						Woodpecker, 39
						Petworth,
						Imperator, by Conductor, 6
						Brunette, *above*
						Sir Peter, *above*
						Pyrrha, 17

(28*a*) THE PRINCESS—*Dam of* THE GREAT UNKNOWN (1845), *by Voltaire*;[23] *and of* SCYTHIA (1846), *by Hetman Platoff*.[21]

THE PRINCESS (1841) { Slane, 25 / Sister to Cobweb, 27

(28*b*) VERBENA—*Dam of* ITHURIEL (1841) *by Touchstone*.[38]

VERBENA (1832) { Velocipede, 41 / Rosalba (1811) { Milo (1802), brother to Agonistes, 53 / Sister to Rubens, 27

(29) SAUNTERER (1854),

BIRDCATCHER, SIR HERCULES, ENNUI, GUICCIOLI, &c.

SAUNTERER (1854)	Irish Birdcatcher (1833) (bro. to *Faugh-a-Ballagh*)	Sir Hercules (1826)	Whalebone (1807)	Waxy (1790)	Pot 8 os, 27
				Penelope (1708)	Maria, 27
			Peri (1822)	Wanderer (1811)	Trumpator, 27
				Thalestris (1809)	Prunella, 27
		Guiccioli (1823)	Bob Booty (1804)	Chanticleer (1787)	Gohanna,
				Ierne (1790)	Catherine,
			Flight (Irish) (1809)	Escape (1802)	Alexander, 7
				Young Heroine	Rival, by Sir Peter,
	Ennui (1843)	Bay Middleton (1833)	Sultan (1810)	Selim (1802)	Woodpecker, 3
				Bacchante (1809)	Eclipse Mare, 16
			Cobweb (1821)	Phantom (1808)	Bagot, 16
				Filagree (1815)	Gamahoe Mare, 16
		Blue Devils (1837)	Velocipede (1825)	Blacklock (1814)	Commodore
				Daughter of (1817)	Highflyer Mare,
			Care (1825)	Woful (1809)	Bagot, 16
				Recovery's dam (1819)	Heroine, by Hero,
					Buzzard, 39
					Alexander Mare,
					Williamson's Ditto, 27
					Sister to Calomel, 27
					Walton, 27
					Julia, 27
					Soothsayer, 27
					Web, 27
					Whitelock, 41
					Coriander Mare, 41
					Juniper, 41
					Sorcerer Mare, 41
					Waxy, *above*
					Penelope, *above*
					Rubens, 27
					Tippitywitchet,

(30) LAMBTON (1850),

THE CURE, PHYSICIAN, MORSEL, VARIATION, &c.

LAMBTON (1850)	The Cure (1841)	Physician (1829)	Brutandorf (1821)	Blacklock (1814)	Whitelock, 41
				Mandane (1800)	Coriander Mare, 41
			Primette (1820)	Prime Minister (1810)	Pot 8 os, 21
				Miss Paul (1811)	Y. Camilla, 21
		Morsel (1830)	Mulatto (1823)	Catton (1809)	Sancho, 40
				Desdemona (1811)	Miss Hornpipe Teazle,
			Linda (1825)	Waterloo (1814)	Sir Paul, 30
				Cressida (1807)	Miss Dunnington, by Shuttle—Miss Grimstone,
	Elphine (1837)	Emilius (1820)	Orville (1793)	Beningbrough (1791)	Columnus, 23
				Evelina (1791)	Lucy Gray, 23
			Emily (1810)	Stamford (1794)	Orville, *below*
				Daughter of (1799)	Fanny, 23
		Variation (1827)	Bustard (1813)	Castrel (1801)	Walton, 27
				Miss Hap (1806)	Penelope, 27
			Johanna Southcote (1811)	Beningbrough (1791)	Whiskey, 15
				Lavinia (1802)	Y. Giantess,
					King Fergus, 17
					Herod Mare, 17
					Highflyer, 17
					Termagant, 17
					Sir Peter, 17
					Horatia, 17
					Whiskey, 17
					Grey Dorimant, 17
					Buzzard, 39
					Alexander Mare,
					Shuttle,
					Sister to Haphazard, 38
					King Fergus, 17
					Herod Mare, 17
					Pipator, 28
					Dick Andrews' Dam,

(30*a*) MISS SOPHIA—*Dam of* MASTER HENRY (1815) *and* EMMA (1819,) *by Orville.*[17]

MISS SOPHIA (1805)	Stamford, 17			
	Sophia (1798)	Buzzard, 39		
		Huncamunca (1787)	Highflyer, 17	
			Cypher (1772)	Squirrel, 50
				Sister to Miss Belsea, 11*a*

(31) **THE SADDLER (1828),**

WAVERLEY, MARGARETTA, CASTRELLINA.

THE SADDLER (1828)	Waverley (1817)	Whalebone (1807)	Waxy (1790)	Pot 8 os (1773)	Eclipse, 4 Sportsmistress,
				Maria (1777)	Herod, 2 Lisette,
			Penelope (1798)	Trumpator (1782)	Conductor, 6 Brunette,
				Prunella (1788)	Highflyer, *below* Promise,
		Margaretta (1802)	Sir Peter (1784)	Highflyer (1774)	Herod, 2 Rachel,
				Papillon (1769)	Snap, Miss Cleveland,
			Sis. to Cracker (1792)	Highflyer (1774)	Herod, 2 Rachel,
				Nutcracker (1767)	Matchem, 1 Sis. to Ancas. Starling,
	Castrellina (1823)	Castrel (1803)	Buzzard (1787)	Woodpecker (1773)	Herod, 2 Miss Ramsden,
				Misfortune (1775)	Dux, 63 Curiosity,
			Daughter of (1790)	Alexander (1782)	Eclipse, 4 Grecian Princess,
				Daughter of	Highflyer, *above* Alfred Mare,
		Daughter of (1815)	Waxy (1790)	Pot 8 os (1773)	Eclipse, 4 Sportsmistress,
				Maria (1777)	Herod, 2 Lisette,
			Bizarre (1811)	Peruvian (1806)	Sir Peter, 38 Boadrow Mare, 38
				Violante (1802)	John Bull, 38 Sister to Skyscraper, 38

(32) **SAFEGUARD (1841),**

WITCHCRAFT, FAIR ELLEN (*dam of* LILIAS, *by Interpreter*[102]).

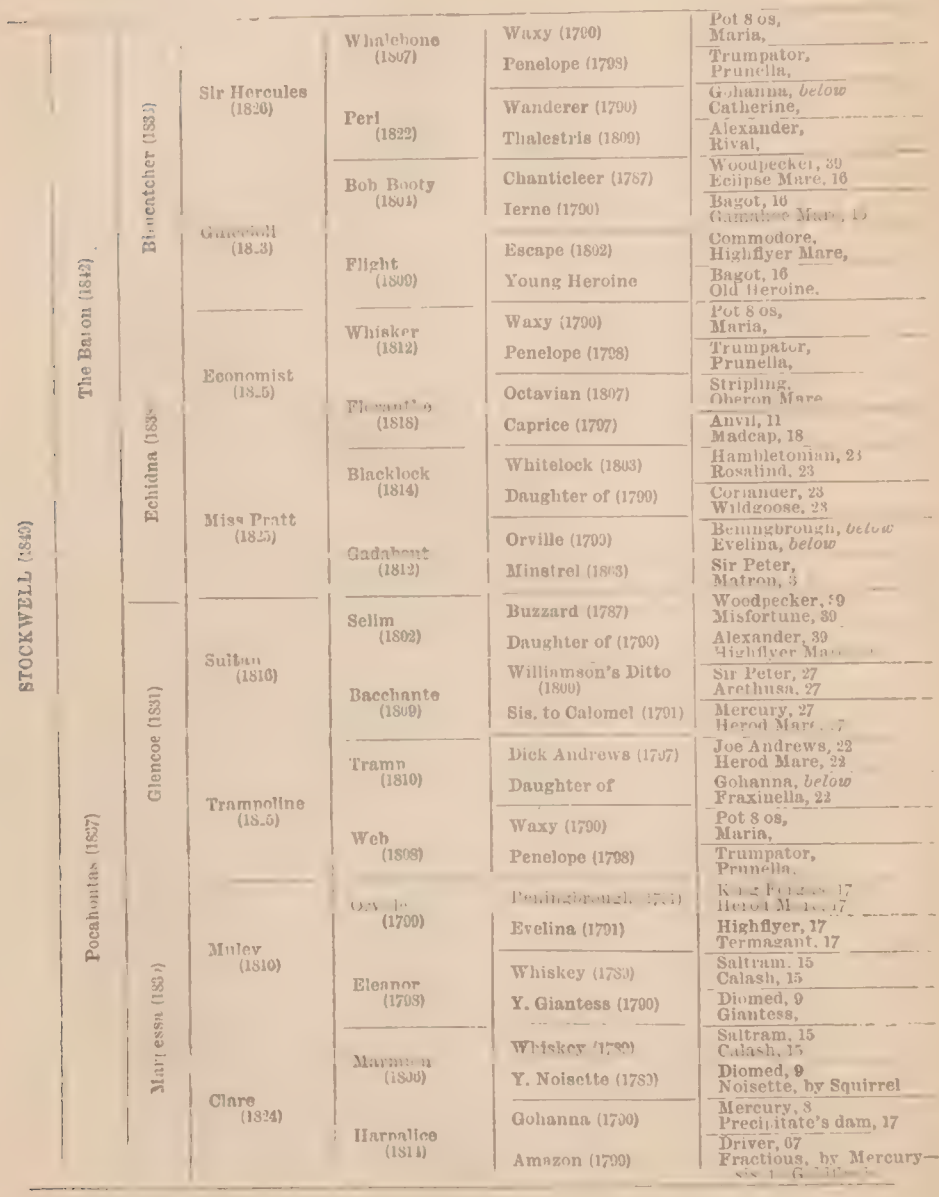
SAFEGUARD (1841)	Defence (1824)	Whalebone (1807)	Waxy (1790)	Pot 8 os (1773)	Eclipse, 4 Sportsmistress,
				Maria (1777)	Herod, 2 Lisette,
			Penelope (1798)	Trumpator (1782)	Conductor, 6 Brunette,
				Prunella (1788)	Highflyer, 17 Promise,
		Defiance (1816)	Rubens (1805)	Buzzard (1787)	Woodpecker, Misfortune,
				Daughter of (1790)	Alexander, Highflyer Mare,
			Little Polly (1806)	Highland Fling (1798)	Spadille, Cælia,
				Harriet (1799)	Volunteer 8 Alfred Mare,
	Daughter of (1822)	Selim (1802)	Buzzard (1787)	Woodpecker (1773)	Herod, 2 Miss Ramsden,
				Misfortune (1775)	Dux, Curiosity,
			Daughter of (1790)	Alexander (1782)	Eclipse, 4 Grecian Princess,
				Daughter of	Highflyer, 17 Alfred Mare,
		Euryone (1813)	Witchcraft (1801)	Sir Peter (1784)	Highflyer, 17 Papillon,
				Queen Mab (1785)	Eclipse, 4 Mercury's dam, 8
			Fair Ellen (1805)	Wellesley Grey Arab	Imported,
				Maria (1789)	Highflyer, 17 Nutcracker 31

(32*a*) EVERLASTING—*Sister to* EAGLE (1774); *and Dam of* SKYSCRAPER (1786), *by Highflyer;*[17] *and of* GOLDFINCH (1787), *by Woodpecker.*[39]

EVERLASTING (1775) { Eclipse, 4
Hyena (1762), sister to Elfrida, 11*a*

(33) STOCKWELL (1849)—*Brother to* RATAPLAN (1850).

POCAHONTAS—*Dam of* KING TOM (1851), *by Harkaway*; [18] *of* DOLLY VARDEN (1846) *and* INDIANA (1849), *by Muley Moloch*; *of* STROOD (1852), *by Chatham*; *of* AYACANORA (1854), *by Birdcatcher*; [33] *of* THE KNIGHT OF KARS (1855), *by Nutwith*; *of* KNIGHT OF ST. PATRICK (1858), *by Knight of St. George*; *and of* AURICULA (1861) *and* ARAUCARIA (1862), *by Ambrose*.



(33*a*) PAPILLON—*Dam of* SIR PETER (1784), *by Highflyer*.[17]

PAPILLON (1769) { Snap, 61*a*
Miss Cleveland (1758) { Regulus, 4
Midge { Son of Bay Bolton, 4
Miss Belsea's dam, 11*a*

(34) **BRIBERY (1851),**

Dam of ST. ALBANS (1857), FRAILTY (1858), SAVERNAKE (1863), *and* BRIDGWATER (1867), *by Stockwell*;[33] *and of* BEATRICE (1860), *by Voltigeur*.[23]

BRIBERY (1851)	The Libel (1842)	Pantaloon (1834)	Castrel (1801)	Buzzard (1787)	Woodpecker, 39
				Daughter of (1790)	Misfortune, 39
					Alexander, 39
			Idalia (1815)	Peruvian (1800)	Highflyer Mare, 39
				Musidora (1804)	Sir Peter, 39
					Boudrow Mare, 39
		Pasquinade (1839) (*sis. to Touchstone*)	Camel (1832)	Whalebone (1807)	Meteor, 39
				Daughter of (1819)	Maid of all Work, 39
			Banter (1820)	Master Henry (1815)	Waxy, 38
				Boadicea (1807)	Penelope, 38
	Splitvote (1841)	St. Luke (1835)	Bedlamite (1823)	Welbeck (1815)	Schim, 38
				Maniac (1806)	Maiden, 38
			Eliza Leeds (1817)	Comus (1803)	Orville, 38
				Helen (1811)	Miss Sophia, 38
		Electress (1819)	Election (1804)	Gohanna (1790)	Alexander, 38
				Chesnut Skim (1791)	Brunette, 38
			Daughter of (1805)	Stamford (1794)	Soothsayer, 27
				Miss Judy (1784)	Pledge,
					Shuttle, 20
					Anticipation.
					Sorcerer, 28
					Houghton Lass, 28
					Hambletonian, 23
					Sister, by Overton, 23
					Mercury, 33
					Herod Mare, 33
					Woodpecker, 24
					Silver's dam, 24
					Sir Peter, 24
					Horatia, 24
					Alfred, 24
					Manilla, 24

(35) **SNOWDROP (1843),**

Dam of GEMMA DI VERGY (1851), *by Sir Hercules*;[3] *of* LADY (1850), *and* LURLEY (1851), *by Orlando*; *of* VERDERER (1857), *by Flatcatcher*, *of* BAFFLER (1859), *by Newminster*; *and of* EDWY (1862), *by Ethelbert*.

SNOWDROP (1843)	Heron (1832)	Bustard (1813)	Castrel (1801)	Buzzard (1787)	Woodpecker, 39
				Daughter of (1790)	Misfortune, 39
					Alexander, 39
			Miss Hap (1805)	Shuttle (1773)	Highflyer Mare, 39
				Sis. to Haphazard	A. Mariske, Vauxhall Snap Mare.
		Daughter of (1827)	Orville (1799)	Beningbrough (1791)	Sir Peter, *below*
				Evelina (1791)	Miss Hervey, *below*
			Rosanne (1821)	Dick Andrews (1797)	King Fergus, 17
				Rosette (1803)	Herod Mare, 17
					Highflyer, 17
					Termagant, 17
					Joe Andrews,
					Highflyer Mare,
					Beningbrough, 17
					Rosamond,
		Filho da Puta (1812)	Haphazard (1797)	Sir Peter (1784)	Highflyer, 17
				Miss Hervey (1775)	Papillon,
			Mrs. Barnet (1806)	Waxy (1790)	Eclipse, 4
				Daughter of (1788)	Clio,
	Fairy (1853)	Britannia (1813)	Orville (1799)	Beningbrough (1791)	Pot 8 os, 38
				Evelina (1791)	Maria, 38
			Daughter of (1797)	Coriander (1780)	Woodpecker, 38
				Sis. to Swordsman	Hemel, 38
					King Fergus, 17
					Herod Mare, 17
					Highflyer, 17
					Termagant, 17
					Pot 8 os, 38
					Lavender,
					Weasel, 49
					Turk Mare,

(35*a*) MISS HERVEY—*Dam of* HAPHAZARD (1797), *by Sir Peter*.[17]

MISS HERVEY (1775) { Eclipse, 4 / Clio (1760) { Y. Cade { Cade, 1 / Miss Partner, 1 } / Dr. of { Starling, 5*a* / Dr. of { Bartlett's Childers, 4 / Dr. of { Bay Bolton, 4 / Dr. of { Byerly Turk / Dr. of { Bustler, by Helmsley Turk

(36) PARADIGM (1852).

Dam of LORD LYON (1863), *and* ACHIEVEMENT (1864), *by Stockwell*;[33] *of* KING AT ARMS (1856), MAN AT ARMS (1857), PANOPLY (1859), *and* BLUE MANTLE (1860), *by Kingston*;[35] *of* ROUGE DRAGON (1858), *by Windhound*;[38] *and of* GARDEVISURE (1862), HATCHMENT (1865), *and* NOYRE TAUREN (1866), *by Vedette.*

PARADIGM (1852)	Paragone (1843)	Touchstone (1831)	Camel (1822)	Whalebone (1807)	Waxy (1790)	Pot 8 os, *below* Maria *below*
					Penelope (1798)	Trumpator, *below* Prunella, *below*
				Daughter of (1812)	Selim (1802)	Buzzard, *below* Alexander Mare, *below*
					Maiden (1801)	Sir Peter, 38 Phenomenon Mare, 38
			Banter (1826)	Master Henry (1815)	Orville (1799)	Beningbrough, *below* Evelina, *below*
					Miss Sophia (1805)	Stamford, 38 Sophia, 38
				Boadicea (1807)	Alexander (1782)	Eclipse, 38 Grecian Princess, 38
					Brunette	Amaranthus, 38 Mayfly, 38
		Hoyden (1837)	Tomboy (1829)	Jerry (1821)	Smolensko (1810)	Sorcerer, 25 Wowski, 25
					Louisa (1813)	Orville, *below* Thomasina,
				Beeswing's dam (1817)	Ardrossan (1809)	John Bull, 38 Miss Whip,
					Lady Eliza (1813)	Whitworth, X. Y. Z.'s dam,
			Rochana (1831)	Velocipede (1825)	Blacklock (1814)	Whitelock, 41 Coriander Mare, 41
					Daughter of (1817)	Juniper, 41 Sorcerer Mare, 41
				Miss Garforth (1819)	Walton (1799)	Sir Peter, 27 Arethusa, 27
					Daughter of	Hyacinthus, 39 Zara, 95
	Ellen Horne (1844)	Redshank (1833)	Sandbeck (1818)	Catton (1809)	Golumpus (1802)	Gohanna, 22 Catherine, 22
					Lucy Gray (1804)	Timothy, 22 Lucy, 22
				Orvillina (1804)	Beningbrough (1791)	King Fergus, 17 Herod Mare, 17
					Evelina (1791)	Highflyer, 17 Termagant, 17
			Johanna (1813)	Selim (1802)	Buzzard (1787)	[illegible] Misfortune,
					Daughter of (1790)	Alexander, Highflyer Mare,
				Daughter of	Skyscraper (1786)	Highflyer, 38 Everlasting, 38
					Daughter of	Dragon, 41 Fidget's dam,
		Delhi (1838)	Plenipotentiary (1831)	Emilius (1820)	Orville (1799)	Beningbrough, *above* Evelina, *above*
					Emily (1810)	Stamford, 17 Whiskey Mare, 17
				Harriet (1819)	Pericles (1809)	Evander, 17 Precipitate Mare, 17
					Daughter of [illegible]	Selim, *above* Pipylina, 17
			Pawn Junior (1817)	Waxy (1790)	Pot 8 os (1773)	Eclipse, 4 Sportsmistress,
					Maria (1777)	Herod, 2 Lisette,
				Pawn (1808)	Trumpator (1782)	Conductor, 6 Brunette,
					Prunella (1788)	Highflyer, 17 Promise,

(36a) LUNA (1779).

LUNA (1779) { Herod, 2
Proserpine (1766), sister to Eclipse, 4

(37) **TIM WHIFFLER (1859).**

VAN GALEN, VAN TROMP, LANERCOST, BARBELLE, LITTLE CASSINO, INHERITOR, SYBIL, UGLY BUCK, SYLPH.

TIM WHIFFLER (1859)	Van Galen (1833)	Van Tromp (1814)	Lanercost (1835)	Liverpool (1828)	Tramp (1810)	Dick Andrews, 22 Gohanna Mare, 22
					Daughter of (1803)	Whisker, 22 Mandane, 22
				Otis (1820)	Bustard (1801)	Buzzard, 22 Gipsy, 22
					Daughter of (1813)	Election, 22 Highflyer Mare, 22
			Barbello (1836)	Sandbeck (1815)	Catton (1809)	Golumpus, 22 Lucy Gray, 22
					Orvillina (1804)	Beningbrough, 22 Evelina, 22
				Darioletta (1822)	Amadis (1807)	Don Quixote, 22 Fanny, 22
					Selima (1810)	Selim, 22 Pot 8 os Mare, 22
		Little Cassino (1843)	Inheritor (1851)	Lottery (1820)	Tramp (1810)	Dick Andrews, 22 Gohanna Mare, 22
					Mandane (1800)	Pot 8 os, Y. Camilla,
				Handmaiden (1817)	Walton (1799)	Sir Peter, *below* Arethusa, 80
					Anticipation (1802)	Beningbrough, 17 Expectation,
			Daughter of (1836)	Waverley (1817)	Whalebone (1807)	Waxy, *below* Penelope, *below*
					Margaretta (1802)	Sir Peter, *below* Sis. to Cracker, 31
				Daughter of (1812)	Shuttle (1793)	Y. Marske, Vauxhall Snap Mare,
					Lady Sarah (1794)	Fidget, by Florizel, 9 Harriet's dam,
		Ugly Buck (1811)	Venison (1833)	Partisan (1811)	Walton (1799)	Sir Peter, *below* Arethusa,
					Parasol (1800)	Pot 8 os, Prunella,
				Fawn (1823)	Smolensko (1810)	Sorcerer, 28 Wowski, 25
					Jerboa (1803)	Gohanna, 22 Camilla,
			Monstrosity (1838)	Pleninotentiary (1831)	Emilius (1800)	Orville, 17 Emily, 17
					Harriet (1819)	Pericles, 17 Selim Mare, 17
				Puce (1834)	Rowton (1826)	Oiseau, 40 Katherina, 40
					Pucelle (1821)	Muley, 40 Medora, 40
	Sybil (1831)	Sylph (1832)	Filho da Puta (1812)	Haphazard (1797)	Sir Peter (1784)	Highflyer, 17 Papillon,
					Miss Hervey (1775)	Eclipse, 4 Clio, 65
				Mrs. Barnet (1803)	Waxy (1790)	Pot 8 os, Maria,
					Daughter of (1788)	Woodpecker, 38 Heinel, 38
			Twatty (1819)	Whalebone (1807)	Waxy (1790)	Pot 8 os, Maria,
					Penelope (1793)	Trumpator, Prunella,
				Daughter of (1812)	Canopus (1807)	Gohanna, 22 Colibri,
					Daughter of (1804)	Y. Woodpecker, 16 Fractious, 33

(37*a*) VIOLET *Dam of* GOLDILOCKS (1793), *by Delpini*;[13] *and of* THOMASINA (1804), *by Timothy*.[107]

VIOLET (1787)
- Shark (1771)
  - Marske, 4
  - Dr. of
    - Snap, 61*a*
    - Dr. of
      - Marlborough (brother to Babraham, 22*a*
      - Natural Barb Mare
- Dr. of (1772)
  - Syphon, 49
  - Quick's Charlotte (1756)
    - Blank, 21*a*
    - Dr. of
      - Crab, 5
      - Dr. of
        - Dyer's Dimple
          - Leedes Arabian
          - Dr. of
            - Spanker, 1
            - Dodsworth Barb Mare
        - Dr. of Bethell's Castaway (brother to Woodcock, 4)

(38) PIRYNE (1840),

Dam of LETHERON (1846), WINDHOUND (1847), MISERRIMA (1848), HOBBIE NOBLE (1849), *and* THE REIVER (1850), *by Palatine*;[21] *of* RAMBLING KATE (1852), *and* BLANCHE OF MIDDLEBIE (1856), *by Melbourne*;[21] *and of* KATHERINE LOCH (1857), *by The Flying Dutchman*.[22]

PIRYNE (1840), *sister to Flatcatcher*, 1845

Decoy (1830)	Touchstone (1831) (*brother to Launcelot*, 1837)	Camel (1822)	Whalebone (1807)	Waxy (1790)	Pot 8 os (1773)	Eclipse, *below*
					Maria (1777)	Sportsmistress,
				Penelope (1793)	Herod, 2	Herod, 2
					Lisette,	Lisette,
			Daughter of (1812)	Sorcerer (1802)	Trumpator (1782)	Conductor, 6
					Prunella (1788)	Brunette,
				Maiden (1801)	Buzzard (1787)	Highflyer, *below*
					Daughter of (1790)	Promise,
		Banter (1820)	Master Henry (1815)	Orville (1799)	Beningbrough (1793)	Woodpecker, *below*
					Evelina (1791)	Alexander,
				Miss Sophia (1805)	Stamford (1794)	Highflyer, *below*
					Sophia (1798)	Papillon, *below*
			Boadicea (1807)	Alexander (1782)	Eclipse (1764)	Phenomenon, 13
					Grecian Princess (1770)	Matron, 3
				Brunette	Amaranthus (1769)	King Fergus, 17
					Mayfly (1771)	Herod Mare, 17
		Filho da Puta (1812)	Haphazard (1797)	Sir Peter (1784)	Highflyer (1774)	Highflyer, *below*
					Papillon (1760)	Termagant, 17
				Miss Hervey (1775)	Eclipse (1764)	Sir Peter, [illegible]
					Clio (1760)	Horatia, 17
			Mrs. Barnet (1806)	Waxy (1790)	Pot 8 os (1773)	Buzzard, 39
					Maria (1777)	Huncamunca,
				Daughter of (1788)	Woodpecker (1773)	Marske, 4
					Heinel (1771)	[illegible]
		Finesse (1815)	Peruvian (1800)	Sir Peter (1784)	Highflyer (1774)	Herod, 2
					Papillon (1760)	Rachel,
				Daughter of (1788)	Boudrow (1777)	Snap,
					Escape's dam (1768)	[illegible]
			Violante (1802)	John Bull (1789)	Fortitude (1777)	Marske, 4
					Xantippe (1770)	Spilletta, 4
				Sister to Skyscraper (1788)	Highflyer (1774)	Y. Cade,
					Everlasting (1775)	Starling Mare,

(38a) ARETHUSA (*Dam of* WALTON (1797), *by* PHILO (1800), *by Sir Peter*[27]

ARETHUSA (1792)

Dungannon (1780)	Eclipse, 4					
	Aspasia (1775)	Herod, 2				
		Doris	Blank, 21*a*			
			Helen (1761)	Spectator, 5		
				Daphne (1753)	Godolphin Arabian	
					Dr. of	Fox, 2
						Dr. of
Daughter of (1777)	Prophet Regulus, 4					Childers, 2
	Lucy Spanner (sis. to Lady Thigh), 24*a*					Dr. of
	Virago, 15					Makeless, 1
						Sister to Hemsley, 5
						Dr. of
						Fenwick, 12

(39) **GHUZNEE (1838),**

Dam of MEFANIE (1844), ASSAULT (1845), ESCALADE (1846), STORM (1848), ATTACK (1849), SCALADE (1853), *and* TERRIFIC (1855), *by Touchstone.*[38]

GHUZNEE (1838)	Pantaloon (1824)	Castrel (1801)	Buzzard (1787)	Woodpecker (1773)	Herod (1758)	Tartar, 7 Cypron, 2
					Miss Ramsden	Cade, 1 Dr. of Lonsdale B. Arab.
				Misfortune (1775)	Dux (1761)	Matchem, 1 Duchess.
					Curiosity (1760)	Snap, 56 Sister to Miss Belsea,
			Daughter of (1790)	Alexander (1782)	Eclipse (1764)	Marske, 4 Spilletta, 4
					Grec. Princess (1776)	Williams's Forester, Dr. of Coalition Colt,
				Daughter of	Highflyer (1774)	Herod, *above* Rachel,
					Daughter of (1769)	Alfred, 6 Engineer Mare,
		Idalia (1815)	Peruvian (1803)	Sir Peter (1734)	Highflyer (1774)	Herod, *above* Rachel,
					Papillon (1760)	Snap, Miss Cleveland,
				Daughter of (1788)	Boudrow (1777)	Eclipse, *above* Sweeper Mare, 7
					Escape's dam (1768)	Squirrel, 6 Babraham Mare,
			Musidora (1804) (*sis. to Meteora*)	Meteor (1783)	Eclipse (1764)	Marske, 4 Spilletta, 4
					Daughter of (1765)	Merlin, by Second. Mnr. Pratt, by Mrksmn
				Maid of all Work (1786)	Highflyer (1774)	Herod, *above* Rachel,
					Sister to Tandem	Syphon, Regulus Mare,
	Languish (1830)	Cain (1812)	Paulowitz (1813)	Sir Paul (1802)	Sir Peter (1784)	Highflyer, *below* Papillon, *below*
					Pewet (1786)	Tandem, *above* Termagant, *below*
				Evelina (1791)	Highflyer (1774)	Herod, *above* Rachel,
					Termagant (1772)	Tantrum, Sampson Mare,
			Daughter of (1810)	Paynator (1791)	Trumpator (1782)	Conductor, 6 Brunette,
					Daughter of	Mark Anthony, 5 Signora,
				Daughter of (1805)	Delpini (1781)	Highflyer, *below* Blank Mare, 13
					Sis. to Mary (1795)	Y. Marske, Gentle Kitty, by Silvio,
		Lydia (1822)	Poulton (1805) (*br. to Fyldener and Sir Oliver*)	Sir Peter (1784)	Highflyer (1774)	Herod, *above* Rachel,
					Papillon (1769)	Snap, 56 Miss Cleveland,
				Fanny (1790)	Diomed (1777)	Florizel, 9 Spectator Mare, 9
					Ambrosia (1783)	Woodpecker, *above* Sister to Rachel,
			Variety (1808)	Hyacinthus (1797)	Coriander (1780)	Pot 8 os, Lavender,
					Rosalind (1788)	Phenomenon, 12 Atalanta,
				Sister to Swordsman (1790)	Weasel (1770)	Herod, *above* Eclipse Mare, 35
					Daughter of	Turk, 35 Locust Mare, 35

(39*a*) EVELINA—*Dam of* ORVILLE (1799) *and* ORVILLINA (1801), *by Beningbrough*;[17] *of* CAPSICUM (1805), *by Sir Peter*;[17] *of* CERVANTES (1806), *by Don Quixote*,[22] *and of* PAULOWITZ (1813), *by Sir Paul.*[39]

EVELINA (1791)	Highflyer, 17			
	Termagant (1772)	Tantrum (1760)	Cripple (1750)	Godolphin Arabian Sister to Blossom, 16
			Dr. of	Hampton Court Childers, 53 Dr. of Whitefoot, 5
		Cantatrice (1757)	Sampson, 2	Dr. of Stanyan Arabian Moonah Barb Mare
			Dr. of	Regulus, 4 Marske's dam, 4

(40) VIRAGO (1851),

Dam of PETRUCHIO (1857), *by Orlando*;[24] *of* THALESTRIS (1860), *by Kingston*;[25] *and of* STRADBROKE (1864), *by Thormanby.*

VIRAGO (1851)	Pyrrhus I. (1843)	Epirus (1834) (*brother to Pilis*, 1833)	Langar (1817)	Selim (1802)	Buzzard (1787)	Woodpecker 41 Misfortune, 41
					Daughter of (1799)	Alexander, 41 Highflyer Mare, 41
				Daughter of (1808)	Walton (1799)	Sir Peter, *below* Arethusa,
					Y. Giantess (1790)	Diomed, 9 Giantess
			Olympia (1815)	Sir Oliver (1800)	Sir Peter (1784)	Highflyer, 17 Pandion
					Fanny (1790)	Diomed, 9 Ambrosia, 39
				Scotilla (1795)	Anvil (1779)	Herod, 2 Feather Mare, 11
					Scota (1783)	Eclipse, 4 Harmony, 14
		Fortress (1836)	Defence (1824)	Whalebone (1807)	Waxy (1790)	Pot 8 os, Maria,
					Penelope (1798)	Trumpator, Prunella,
				Defiance (1816)	Rubens (1805)	Buzzard, *above* Alexander Mare, *above*
					Little Folly (1806)	Highland Fling, Harriet,
			Jewess (1827)	Moses (1819)	Whalebone *or* Seymour (*see* 84)	Waxy, *above* Penelope, *above*
					Daughter of (1807)	Gohanna, 24 Grey Skim, 24
				Calendulæ (1815)	Camerton (1808)	Hambletonian, *below* Precipitate Mare, 17
					Snowdrop (1806)	Highland Fling, Daisy, by Buzzard, *above*
	Virginia (1835)	Rowton (1826)	Oiseau (1809)	Camillus (1803)	Hambletonian (1792)	King Fergus, 41 Highflyer Mare, 41
					Faith (1779)	Pacolet, Atalanta,
				Daughter of (1797)	Ruler (1777)	Y. Marske, Flora, by Lofty
					Treecreeper (1789)	Woodpecker, 39 Trentham Mare,
			Katherina (1817)	Woful (1809)	Waxy (1790)	Pot 8 os, Maria,
					Penelope (1798)	Trumpator, Prunella,
				Landscape (1813)	Rubens (1805)	Buzzard, *below* Alexander Mare, *below*
					Iris (1795)	Brush, by Eclipse, 4 Herod Mare, 2
		Pucelle (1821)	Muley (1810)	Orville (1799)	Beningbrough (1791)	King Fergus, 17 Herod Mare, 17
					Evelina (1791)	Highflyer, 17 Termagant,
				Eleanor (1798)	Whiskey (1789)	Saltram, 15 Calash, 15
					Y. Giantess (1790)	Diomed, 9 Giantess,
			Medora (1811)	Selim (1802)	Buzzard (1787)	Woodpecker, 41 Misfortune, 41
					Daughter of (1790)	Alexander, 41 Highflyer Mare, 41
				Daughter of (1803)	Sir Harry (1795)	Sir Peter, *above* Matron, by Alfred, 6
					Daughter of (1790)	Volunteer, 8 Herod Mare, 2

(40a) SYLPHINE—*Sister to* MOUNTAIN DEER (1848) *and* CLARET (1852); *and Dam of* CAMERINO (1853), *by Stockwell.*[33]

- SYLPHINE (1850)
  - Touchstone, 38
  - Mountain Sylph (1837)
    - Belshazzar (1830)
      - Blacklock, 23
      - Manuella (1809) (Dick Andrews, 55; Mandane, 21)
    - Stays (1831)
      - Whalebone, 38
      - Dr. of (1819)
        - Frolic (1812)
          - Hedley (brother to Golumpus, 22)
          - Frisky (1793)
            - Fidget, by Florizel, 9
            - Herod Mare, 2
        - Camel's dam, 38

(41) QUEEN OF TRUMPS (1832).

VELOCIPEDE, BLACKLOCK, MALEK, JUNIPER, DIAMOND, CASTREL.

QUEEN OF TRUMPS (1832)	Velocipede (1821) *(brother to Malek, 1824)*	Blacklock (1811)	Whitelock (1803)	Hambletonian (1792)	King Fergus (1775)	Eclipse, *below*
					Daughter of (1782)	Polly,
				Rosalind (1788)	Phenomenon (1780)	Highflyer, *below*
					Atalanta (1769)	Monimia, by Matchem
			Daughter of (1799)	Commander (1784)	Pot 8 os (1, 75)	Herod, *below*
					Lavender (1778)	Frenzy, 12
				Wildgoose (1792)	Highflyer (1774)	Matchem, *below*
					Coheiress (1783)	Lass of the Mill,
		Daughter of (1817)	Juniper (1805)	Whiskey (1789)	Saltram (1780)	Eclipse, *below*
					Calash (1775)	Spoilsmistress,
				Jenny Spinner (1797)	Dragon (1787)	Herod, *below*
					Sister to Soldier (1775)	Snap Mare,
			Daughter of (1810)	Sorcerer (1799)	Trumpator (1782)	Highflyer, *below*
					Y. Giantess (1792)	Rachel,
				Virgin (1801)	Sir Peter (1784)	Herod, *below*
					Daughter of (1794)	Giantess,
	Princess Royal (1818)	Castrel (1801)	Buzzard (1787)	Woodpecker (1773)	Herod (1758)	Highflyer, *below*
					Miss Ramsden	Papillon, *below*
				Misfortune (1775)	Dux (1761)	Pot 8 os, *above*
					Curiosity (1760)	Editha,
			Daughter of (1799)	Alexander (1782)	Eclipse (1764)	Tartar, 2
					Grecian Princess (1770)	Cypron, 2
				Daughter of	Highflyer (1774)	Cade, 1
					Daughter of (1762)	Dr. of Lonsdale B. Arab,
		Queen of Diamonds (1809)	Diamond (1794)	Highflyer (1774)	Herod (1758)	Matchem, *below*
					Rachel (1763)	Duchess,
				Daughter of (1774)	Matchem (1748)	Snap, 56
					Barbara (1767)	Sis. to Miss Belsea,
			Daughter of (1801)	Sir Peter (1784)	Highflyer (1774)	Marske, 4
					Papillon (1760)	Spilletta, 4
				Lucy (1782)	Florizel (1768)	Williams's Forester,
					Frenzy (1774)	Dr. of Coalition Colt,
						Herod, *below*
						Rachel, *below*
						Alfred, 6
						Engineer Mare,
						Tartar, 2
						Cypron, 2
						Blank,
						Regulus Mare,
						Cade, 1
						Partner Mare, 1
						Snap,
						Miss Vernon,
						Herod, *above*
						Rachel, *above*
						Snap,
						Miss Cleveland,
						Herod, *above*
						Cygnet Mare, 9
						Eclipse, *above*
						Engineer Mare, 12

(41*a*) LITTLE FOLLY—*Dam of* DEFIANCE (1816) *and* ELIZA (1823), *by Rubens.*[37]

LITTLE FOLLY (1806)

- Highland Fling (1798)
  - Spadille (1784)
    - Highflyer, 17
    - Flora (1768)
      - Squirrel, 50
      - Angelica (1761)
        - Snap, 61*a*
        - Sister to Miss Belsea, 11*a*
  - Cælia (1775)
    - Herod, 2
    - Proserpine (sister to Eclipse, 4)
- Harriet (1799)
  - Volunteer, 8
  - Dr. of (1785)
    - Alfred, 6
    - Magnolia (1771)
      - Marske, 4
      - Dr. of (1756)
        - Babraham, 22*a*
        - Dr. of
          - Sedbury
            - Partner, 1
            - Old Montagu Mare, 4
          - Ebony, 61

(42) BUCCANEER (1857)—*Brother to* CHIFFONNIÈRE (1858).

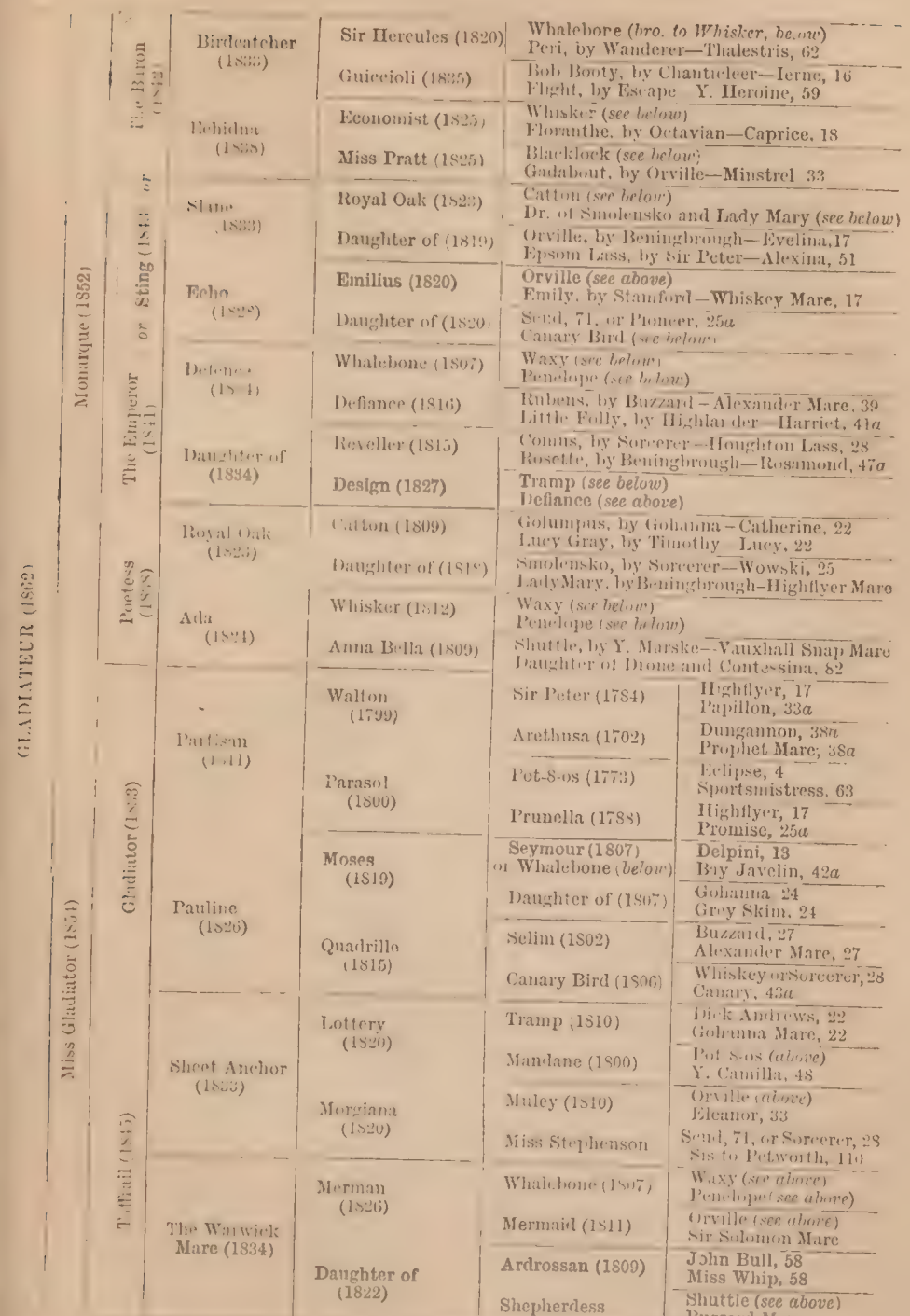
WILD DAYRELL, ION, CAIN, MALEK, PAULOWITZ, LITTLE RED ROVER.

BUCCANEER (1857)	Wild Dayrell (1852)	Ion (1835)	Cain (1822)	Paulowitz (1813)	Sir Paul (1802)	Sir Peter, 39 Pewet, 39
					Evelina (1791)	Highflyer, 39 Termagant, 39
				Daughter of (1810)	Paynator (1791)	Trumpator, *below* Mark Anthony Mare, 9
					Daughter of	Delpini, 39 Sister to Mary, 39
			Margaret (1831)	Edmund (1824)	Orville (1799)	Beningbrough, *below* Evelina, *below*
					Emmeline (1817)	Waxy, *below* Sorcery, *below*
				Medora (1811)	Selim (180.)	Buzzard, 39 Alexander Mare,
					Daughter of (1808)	Sir Harry, by Sir Peter Volunteer Mare, 8
		Ellen Middleton (1846)	Bay Middleton (1833)	Sultan (1816)	Selim (1802)	Buzzard, 39 Alexander Mare,
					Bacchante (1809)	Williamson's Ditto, 27 Sister to Calomel, 27
				Cobweb (1821)	Phantom (1808)	Walton, 27 Julia, 27
					Filagree (1815)	Soothsayer, *below* Web, 27
			Myrrha (1831)	Malek (1824) *bro. to Velocipede)*	Blacklock (1814)	Whitelock, 41 Coriander Mare, 41
					Daughter of (1817)	Juniper, 41 Sorcerer Mare, 41
				Bessy (1815)	Young Gouty (1805)	Gouty, Dungannon Mare,
					Grandiflora (1810)	Sir Harry Dimsdale, Pipator Mare, 28
	Daughter of (1841)	Little Red Rover (1827)	Tramp (1810)	Dick Andrews (1797)	Joe Andrews (1778)	Eclipse, 4 Amaranda,
					Daughter of (1790)	Highflyer, 17 Cardinal Puff Mare,
				Daughter of (1803)	Gohanna (1790)	Mercury, 8 Herod Mare, 23
					Fraxinella (1793)	Trentham, 67 Sister to Goldfinch,
			Miss Syntax (1811) *sister to Doctor Syntax)*	Paynator (1791)	Trumpator (1782)	Conductor, 6 Brunette, *below*
					Daughter of	Mark Anthony, 5 Sigma, 55
				Daughter of	Beningbrough (1791)	King Fergus, 17 Herod Mare, 7
					Jenny Mole	Carbuncle, Prince T'Quissan Mare,
		Eclat (1830)	Edmund (1824)	Orville (1799)	Beningbrough (1791)	King Fergus, 17 Herod Mare, 7
					Evelina (1791)	Highflyer, 17 Termagant, 17
				Emmeline (1817)	Waxy (1790)	Pot 8 os, Maria
					Sorcery (1808)	Sorcerer, *below* Cobbea,
			Squib (1820)	Soothsayer (1808)	Sorcerer (1790)	Trumpator, Y. Gentress,
					Goldenlocks (1793)	Delpini, 13 Violet,
				Berenice (1805)	Alexander (1782)	Eclipse, 4 Grecian Princess,
					Brunette	Amaranthus, 38 Mayfly, 38

(42*a*) BAY JAVELIN—*Dam of* SEYMOUR (1807), *by Delpini.*[13]

- BAY JAVELIN (1793)
  - Javelin (1770)
    - Eclipse, 4
    - Miss Rose (1796)
      - Spectator, 5
      - Dr. of
        - Blank, 21*a*
        - Diana (1740)
          - Second (brother to Snip, 61*a*)
          - Dr. of
            - Stanyan Arabian
            - Gipsy
              - King William's No-tongued Barb
              - Dr. of
                - Makeless, 1
                - Royal Mare
  - Y. Flora (1785) (Sister to Spadille, 41*a*)

(43) **GLADIATEUR (1862).**



(43*a*) CANARY—*Dam of* CANARY BIRD (1806), *by Whiskey*[15] *or Sorcerer*.[28]

CANARY (1797) { Coriander (1786) { Pot 8-os, 63 / Lavender, 45*a* } / Miss Green (1787) { Highflyer, 17 / Harriet (1769) { Matchem, 1 / Flora { Regulus, 4 / Daughter of { Bartlett's Childers, 4 / Daughter of { Bay Bolton, 4 / Belgrade Turk Mare

(44) GENERAL PEEL (1861).

YOUNG MELBOURNE, KNOWSLEY (*by Stockwell*), BROWN BESS, CLARISSA.

GENERAL PEEL (1831)	Young Melbourne (1855)	Melbourne (1844)	Humphrey Clinker (1822)	Comus (1809)	Sorcerer, 28 Houghton Lass, 28
				Clinkerina (1812)	Clinker, 28 Pewet, 28
			Daughter of (1825)	Cervantes (1806)	Don Quixote, 28 Evelina, 28
				Daughter of (1818)	Golumpus, 28 Paynator Mare, 28
		Clarissa (1846)	Pantaloon (1824)	Castrel (1801)	Buzzard, 39 Alexander Mare, 39
				Idalia (1815)	Peruvian, 39 Musidora, 39
			Daughter of (1837)	Glencoe (1831)	Sultan, 33 Trampoline, [illegible]
				Frolicsome (1824)	Frolic, 91 Stamford Mare, 17
	Knowsley's dam (1853)	Orlando (1841)	Touchstone (1831)	Camel (1822)	Whalebone, *below* Selim Mare, *below*
				Banter (1826)	Master Henry, 24 Boadicea, 24
			Vulture (1833)	Langar (1817)	Selim, 24 Walton Mare, 24
				Kite (1821)	Bustard, 24 Olympia, 24
		Brown Bess (1844)	Camel (1822)	Whalebone (1807)	Waxy, 24 Penelope, 24
				Daughter of (1812)	Selim, 24 Maiden, 24
			Daughter of (1829)	Brutandorf (1821)	Blacklock, 21 Mandane, 21
				Mrs. Cruikshanks	Welbeck, 34 Tramp's dam, 22

(45) BLACKDOWN (1860),

Brother to RODOMONTADE (1861), LONGDOWN (1862), GREYFOOT (1863), *and* CLATTER (1866).

BLACKDOWN (1860)	Rattle (1830)	The Fallow Buck (1845)	Venison (1833)	Partisan (1811)	Walton, 19 Parasol, 19
				Fawn (1823)	Smolensko, 19 Jerboa, 19
			Plenary (1837) (*sister to Plenipo*)	Emilius (1820)	Orville, 17 Emily by Stamford, 17
				Harriet (1819)	Pericles, 17 Selim Mare, 17
		The Hamble (1839)	Camel (1822)	Whalebone (1807)	Waxy, 24 Penelope, 24
				Daughter of (1812)	Selim, 24 Maiden, 24
			Fanny (1827)	Whisker (1812)	Waxy, 24 Penelope, 24
				Daughter of (1813)	Camillus, 49 Mare by Precipitate, 17, out of Pugilist's dam
	Subtility (1833)	Flatcatcher (1839)	Touchstone (1831)	Camel (1822)	Whalebone, *above* Selim Mare, *above*
				Banter (1826)	Master Henry, 38 Boadicea, 38
			Decoy (1830)	Filho da Puta (1812)	Haphazard, 38 Mrs. Barnet, 38
				Finesse (1816)	Peruvian, 38 Violante, 38
		Chemise (1842)	Slane (1833)	Royal Oak (1823)	Catton, 43 Smolensko Mare, 43
				Daughter of (1819)	Orville, 17 Epsom Lass, 43
			Size (1837)	Starch (1819)	Waxy Pope, 20 Miss Stavely, 20
				Magawiska (1826)	Whisker, *above* Slight (*sis. to* Selim, [illegible])

(45a) LAVENDER—*Dam of* CORIANDER (1786), *by Pot-8-os.*[63]

LAVENDER (1778) { Herod, 2
Daughter of (1765) { Snap, 61a
Miss Roar (1755) { Cade, 1
Madam (1735) { Bloody Buttocks Arabian
Miss Partner, 1

(46) **SCOTTISH CHIEF (1861).**

LORD OF THE ISLES, FAIR HELEN, MISS ANN, THE LITTLE KNOWN, BAY MISSY, CAMILLA.

SCOTTISH CHIEF (1861)	Lord of the Isles (1853)	Touchstone (1831)	Camel (1822)	Whalebone (1807)	Waxy, 38 Penelope, 38
				Daughter of (1812)	Selim, 38 Maiden, 38
			Banter (1821)	Master Henry (1815)	Orville, 38 Miss Sophia, 38
				Boadicea (1807)	Alexander, 38 Brunette, 38
		Fair Helen (1843)	Pantaloon (1821)	Castrel (1811)	Buzzard, 39 Alexander Mare, 39
				Idalia (1815)	Peruvian, 39 Musidora, 39
			Rebecca (1831)	Lottery (1820)	Tramp, 22 Mandane, 21
				Daughter of (1818)	Cervantes, 28 Anticipation,
	Miss Ann (1848)	The Little Known (1836)	Muley (1810)	Orville (1799)	Beningbrough, 22 Evelina, 22
				Eleanor (1798)	Whiskey, 15 Y. Giantess,
			Lacerta (1816)	Zodiac (1801)	St. George, Abigail,
				Jerboa (1803)	Gohanna, 25 Camilla,
		Bay Missy (1842)	Bay Middleton (1833)	Sultan (1816)	Selim, 27 Bacchante, 27
				Cobweb (1821)	Phantom, 27 Filagree, 27
			Camilla (1832)	Y. Phantom (1822)	Phantom, 27 Emmeline, 30
				Sister to Speaker	Camillus, 40 Sis. to Prime Minister.

(47) **UNION JACK (1861).**

IVAN, VAN TROMP, CAPRICE, CORONATION, LÆLIA, SIBERIA.

UNION JACK (1861)	Ivan (1851)	Van Tromp (1844)	Lanercost (1835)	Liverpool (1828)	Tramp, 22 Whisker Mare, 22
				Otis (1820)	Bustard, 22 Election Mare, 22
			Barbelle (1836)	Sandbeck (1818)	Catton, 22 Orvillina, 22
				Darioletta (1822)	Amadis, 22 Selima, 22
		Siberia (1855)	Brutandorf (1821)	Blacklock (1814)	Whitelock, 21 Coriander Mare, 21
				Mandane (1800)	Pot 8 os, 21 Young Camilla, 21
			Daughter of (1824)	Blucher (1811)	Waxy, 27 Pantina,
				Opal (1806)	Sir Peter, Olivia, by Justice, out of Cypher,
	Caprice (1847)	Coronation (1838)	Sir Hercules (1826)	Whalebone (1807)	Waxy, 27 Penelope, 27
				Peri (1822)	Wanderer, 1?2 Thalestris,
			Ruby (1825)	Rubens (1805)	Buzzard, 27 Alexander Mare, 27
				Daughter of (1812)	Williamson's Dido, -? Agnes, by Shuttle,
		Lælia (1842)	Sheet Anchor (1832)	Lottery (1820)	Tramp, 26 Mandane, 26
				Morgiana (1820)	Muley, 26 Miss Stephenson, 26
			Cotillon (1831)	Partisan (1811)	Walton, 19 Parasol, 19
				Quadrille (1815)	Selim, 27 Canary Bird, 20

(47*a*) LUCETTA *Dam of* PHLEGON (1840), *by Sultan*[27] *or Beiram* (*son of Sultan*).

LUCETTA (1856)	Reveller (1815)	Rosette (1803)	Comus, 28		
			Beningbrough (1788)	Rosamond	Tandem, 49
					Tuberose, 82
	Luss (1817)	Jessy (1809)	Hedley, 46*a*		
			Totteridge (1791)	Cracker, 31	
				Marcella (1783)	Dungannon, 38*a*
					Mambrino, 64
				Medea (1778)	Sweetbriar, 59
					Angelica, 41*a*

(48) CAMILLA—*Sister to* DRIVER (1783), *and Dam of* Y. CAMILLA (1787), COLIBRI (1793), *and* CATHERINE (1795), *by Woodpecker, and of* JERBOA (1803), *by Gohanna*.[27]

- CAMILLA (1778)
  - Trentham (1766)
    - Sweepstakes (1749)
      - Gower Stallion (1740)
        - Godolphin Arabian
        - Sister to Tortoise (1735)
          - Whitefoot, 5
          - Little Hartley Mare,
      - Daughter of (1731)
        - Partner, 1
        - Brown Farewell, 1
    - Miss South (1759)
      - South (1750)
        - Regulus, 4
        - Daughter of
          - Sorcheels, 5
          - Daughter of
            - Makeless, 1
            - D'Arcy Royal Mare
      - Daughter of
        - Cartouch
          - Bald Galloway, 1
          - Dr. of
            - Cripple Barb
            - Sister to Brown Farewell, 1
        - Ebony,
  - Coquette (1765)
    - Compton Barb
    - Sister to Regulus, 4

(49) PEWET—*Dam of* SIR PAUL (1802) *and* PAULINA (1804), *by Sir Peter; and of* CLINKERINA (1812), *by Clinker*.[28]

- PEWET (1746)
  - Tandem (1778)
    - Syphon (1750)
      - Squirt, 4
      - Daughter of
        - Patriot (1729)
          - Bay Bolton, 4
          - Dr. of
            - Jigg, 1
            - Old Lady, 3
        - Daughter of
          - Crab, 5
          - Sister to Sloven
            - Bay Bolton, 4
            - Sister to Maxbury, 1
    - Dr. of (1762)
      - Regulus, 4
      - Dr. of (1758)
        - Snip,
        - Dr. of (1745)
          - Cottingham (1765)
            - Hartley's Blind Horse,
            - Mare by son of Snake, 4
          - Warlock Galloway
            - Snake, 4
            - Sis. to Carlisle Gelding
              - Bald Galloway, 1
              - Dr. of
                - Carlisle Turk
                - Dr. of
                  - Bald Galloway, 1
                  - Byerly Turk Mare
  - Termagant, 77

(50) BRUNETTE—*Dam of* TRUMPATOR (1782), *by Conductor*,[6] *and of* PIPATOR (1786), *by Imperator (son of Conductor)*.

- BRUNETTE (1771)
  - Squirrel (1754)
    - Old Traveller (1735)
      - Partner, 1
      - Dr. of
        - Almanzor (1713)
          - Darley Arabian
          - Hantboy Mare, 2
        - Dr. of
          - Grey Hantboy, 4
          - Dr. of
            - Makeless, 4
            - Dr. of Brimmer, 4
    - Grey Bloody Buttocks (1735)
      - Bloody Buttocks (Arabian)
      - Sister to Guy (1722)
        - Greyhound (Barb)
        - Brown Farewell, 1
  - Dove (1764)
    - Matchless (1754)
      - Godolphin Arabian
      - South's dam,
    - Dr. of (1735)
      - Ancaster Starling (1738)
        - Starling (brother to Camilla, 3)
        - Ringbone (1732)
          - Partner, 1
          - Lusty Thornton,
      - Dr. of
        - Grasshopper (1731)
          - Crab, 5
          - Daughter of
            - Astridge Ball, by Leedes, 2
            - Dodsworth Barb Mare
        - Dr. of
          - Newton's Arabian
          - Dr. of
            - Pert, by Ely Turk
            - Dr. of
              - St. Martin,
              - Dr. of Hales's Turk

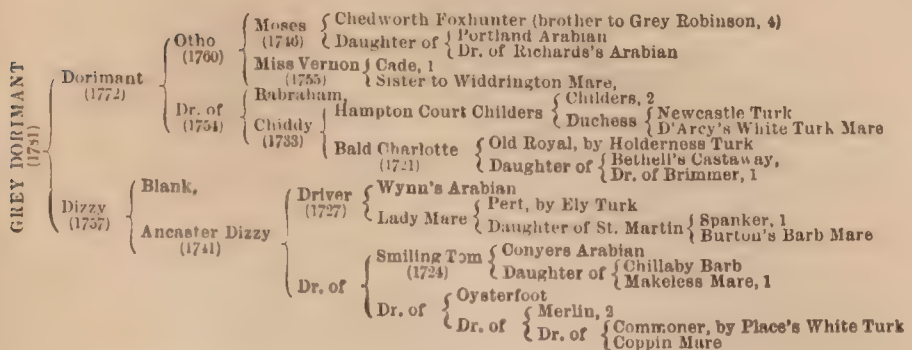
(51) ALEXINA—*Dam of* CORINNA (1798), *by Coriander; and of* HOUGHTON LASS (1801) *and* EPSOM LASS (1803), *by Sir Peter*.

- ALEXINA (1788)
  - Laudella (1790)
    - King Fergus,
    - Daughter of
      - Y. Marske (1771)
        - Marske, 4
        - Dr. of (1759)
          - Blank,
          - Bay Starling
            - Starling,
            - Meynell's sister to Lady Thigh,
      - Cade, 1
      - Beaufremont's dam
        - Brother to Fearnought
          - Bay Bolton, 4
          - Dr. of
            - Lexington Arabian
            - Dr. of
              - Old Spot, 1
              - Dr. of
                - Spanker, 1
                - Byerly Turk Mare
        - Miss Windham
          - Windham
            - Hautboy, 2
            - Dr. of
              - Scalby Turk
              - Dr. of
                - Bustler, 2
                - Dr. of
                  - Place's White Turk
                  - Dr. of Dodsworth Barb
          - Dr. of
            - Belgrade Turk
            - Old Scarborough Mare
              - Makeless, 1
              - Dr. of Brimmer, 1

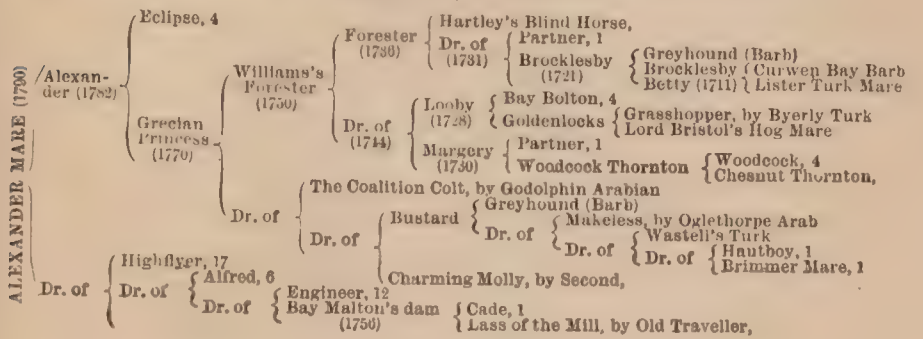
(52) MISFORTUNE—*Dam of* BUZZARD (1787), *by Woodpecker*.

- MISFORTUNE (1775)
  - Dux (1761)
    - Matchem, 1
    - Duchess (1748)
      - Whitenose (1742)
        - Godolphin Arabian
        - Sister to Blaze, 2
      - Miss Shamerkin,
  - Curiosity (1760)
    - Snap,
    - Sister to Miss Belsea,

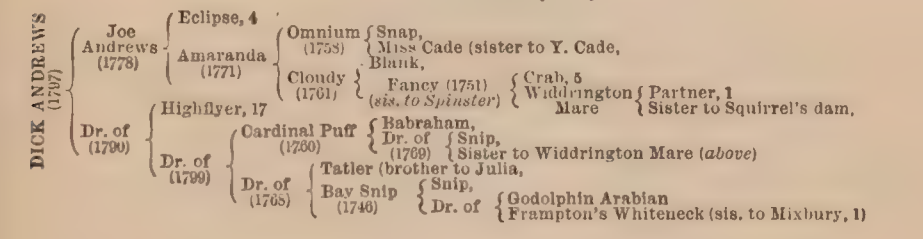
(53) **GREY DORIMANT (1781).**



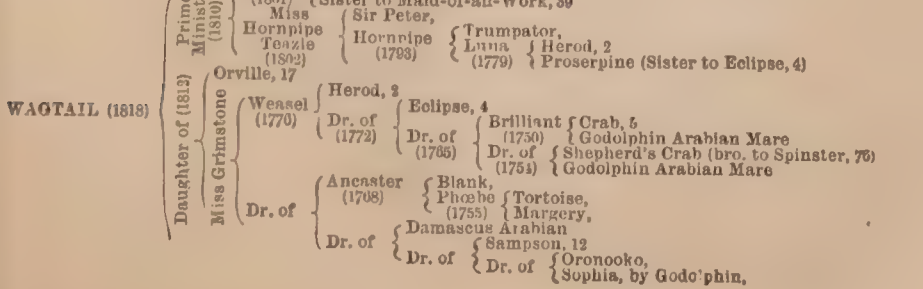
(54) ALEXANDER MARE—*Dam of* CASTREL (1801), SELIM (1802), *and* RUBENS (1805), *by Buzzard.*[39]



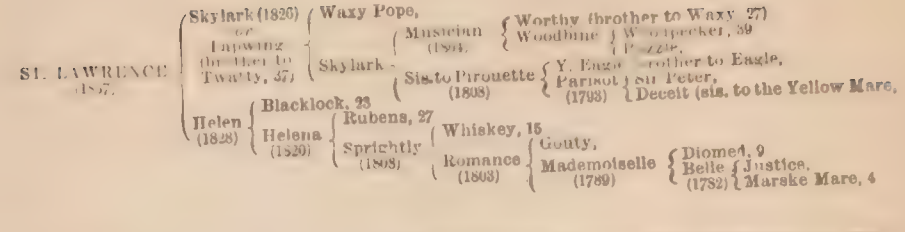
(55) **DICK ANDREWS (1797).**



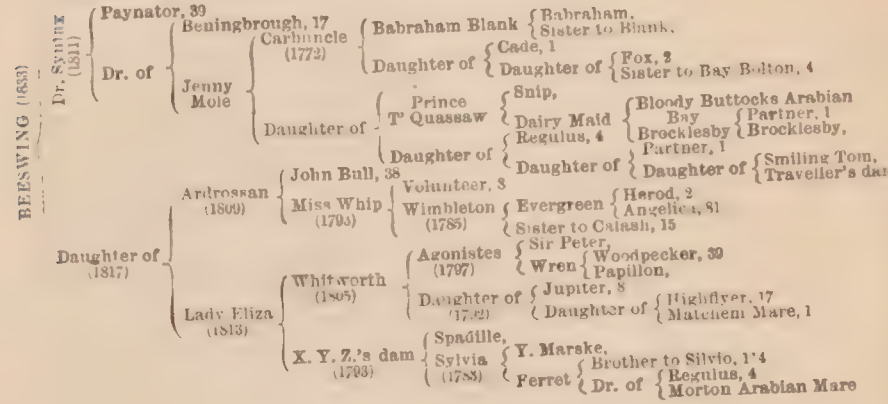
(56) WAGTAIL—*Dam of* LAUREL (1824) *and* BELINDA (18[illegible]), *by Blacklock*;[3] *and of* CHARLES XII. (1836), *by Voltaire.*[39]



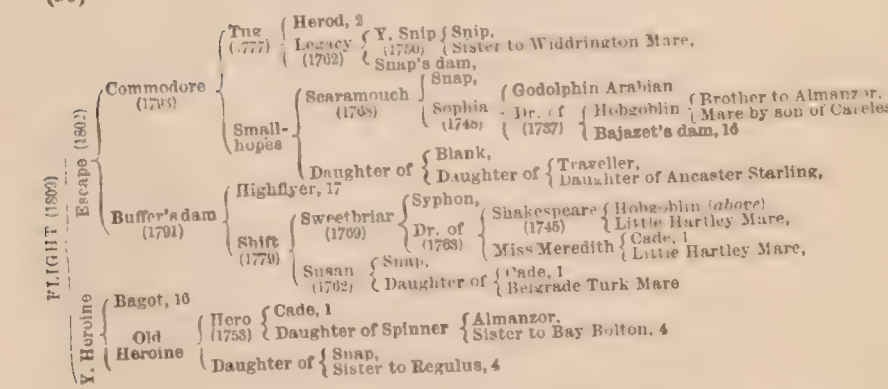
(57) ST. LAWRENCE (1837).



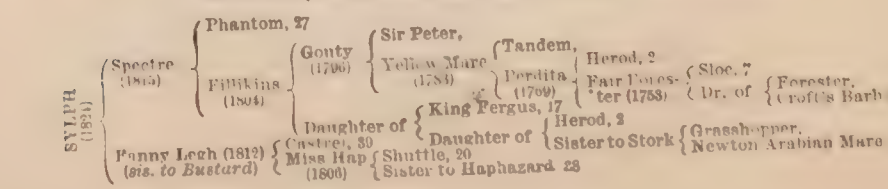
(58) BEESWING—*Dam of* NEWMINSTER (1848), NUNNYKIRK (1846), HONEYDEW (1850), *and* HONEYSUCKLE (1851), *by Touchstone*;[28] *and of* OLD PORT (1844), *by Sir Hercules*.[29]



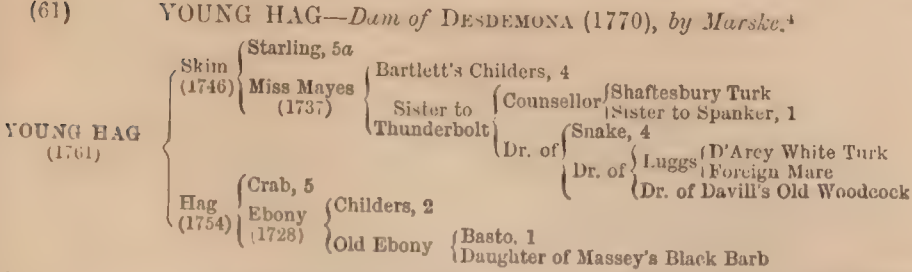
(59) FLIGHT—*Dam of* GUICCIOLI (1823), *by Bob Booty*.[16]



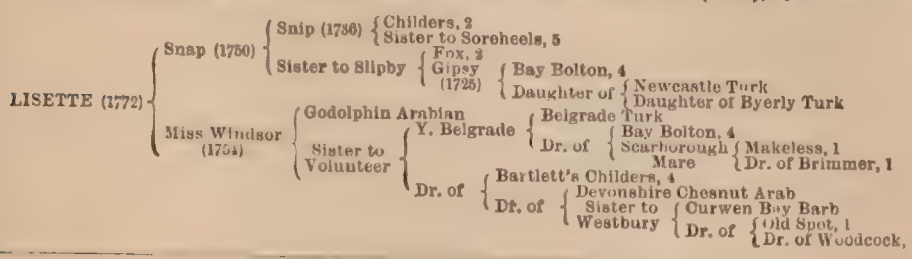
(60) SYLPH—*Dam of* LUGWARDINE (1834), *by Bobadil*; *and of* NEWCOURT (1840), HOPBINE (1841), *and* LADY LIFT (1844), *by Sir Hercules*.[29]



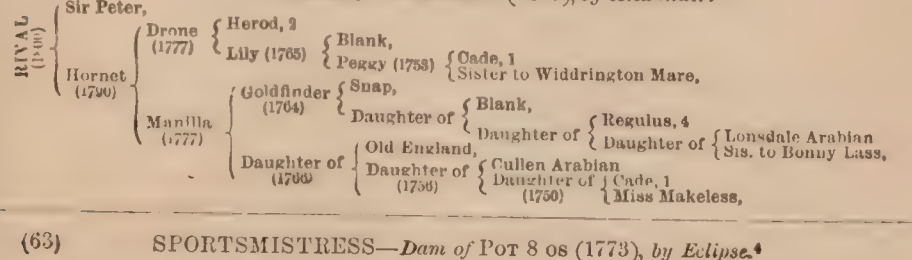
(61) YOUNG HAG—*Dam of* DESDEMONA (1770), *by Marske.*[4]



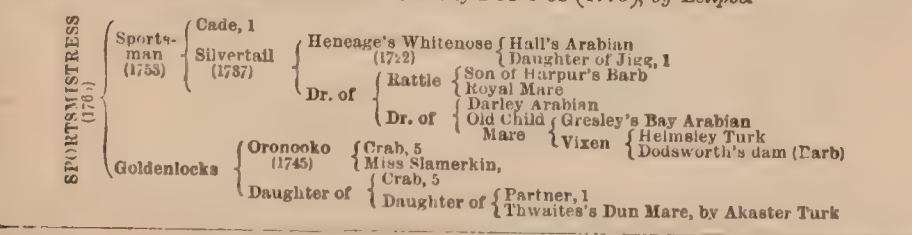
(61*a*) LISETTE—*Sister to* SIGNORA (1767); *and Dam of* MARIA (1777), *by Herod.*[2]



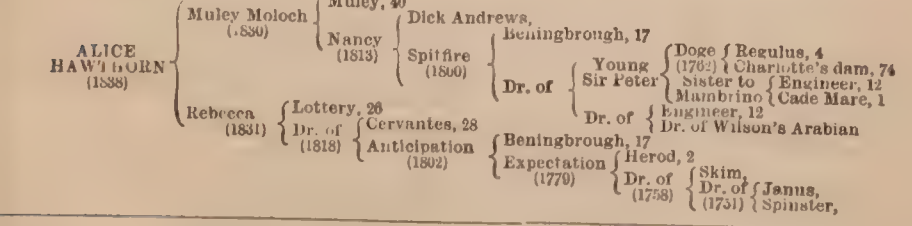
(62) RIVAL—*Dam of* THALESTRIS (1809), *by Alexander.*[75]



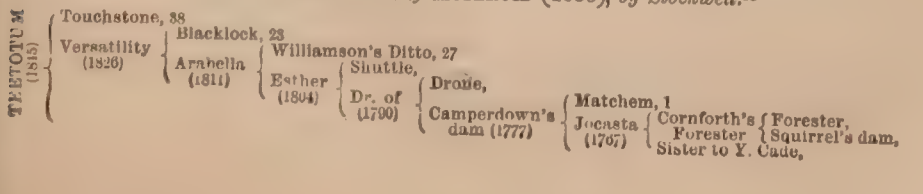
(63) SPORTSMISTRESS—*Dam of* POT 8 OS (1773), *by Eclipse.*[4]



(64) ALICE HAWTHORN—*Dam of* THORMANBY (1857), *by Melbourne*[8] *or Windhound*;[38] *of* OULSTON (1852), *by Melbourne*; *of* LADY HAWTHORN (1854), *by Windhound*; *of* TERRONA (1851), *and* FINDON (1853), *by Touchstone*;[38] *and of* SWEET HAWTHORN (1858), *by Sweetmeat.*[20]



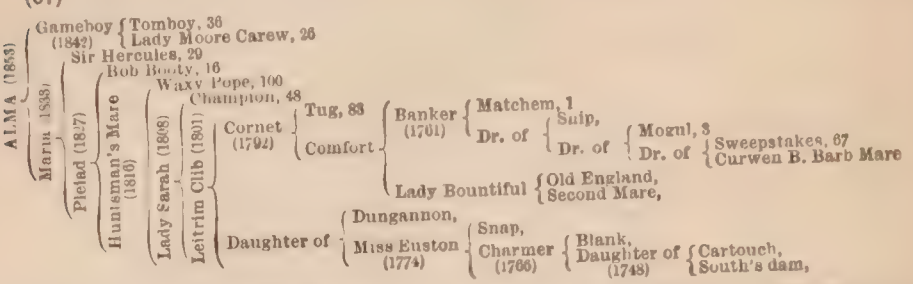
(65) TEETOTUM—*Dam of* ASTEROID (1858), *by Stockwell.*[33]



(66) THE ARROW—*Dam of* CAMBUSCAN (1861), ELETTA (1863), SAGITTARIUS (1866), *and* TITULUS (1867), *by Newminster.*

THE ARROW (1850) { Slane, 25 / Southdown, 10

(67) ALMA—*Dam of* HISTORIAN (1861), *by Stockwell.*[33]



(68) FAIRWATER—*Dam of* FAIRMINSTER (1858), *by Newminster*; *and of* THORWATER (1867), *by Thormanby.*

FAIRWATER (1858) { Loup-Garou (1846) { Lanercost, 22 / Moonbeam (1838) { Tomboy, 36 / Lunatic (1818) { Prime Minister / Maniac, 34
The Bloomer (1850) { Melbourne, 28 / Lady Sarah,

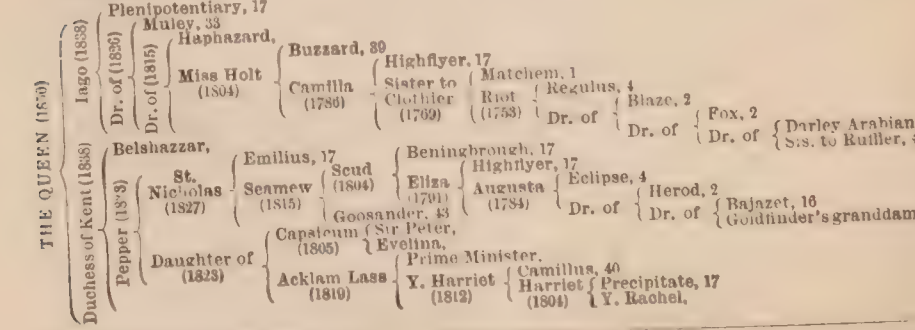
(69) APHRODITE—*Dam of* NAUTILUS (1858), *by West Australian*;[28] *of* ARGONAUT (1859), *by Stockwell*;[33] *and of* SIDEROLITE (1866), *by Asteroid.*

APHRODITE (1843) { Bay Middleton, 27 / Venus (1840) { Sir Hercules, 29 / Echo (Sting's dam), 43

(70) HYBLA—*Dam of* KETTLEDRUM (1858), GONG (1863), CYMBAL (1865), *and* SWEET SOUND (1867), *by Rataplan*;[3] *of* MINCEMEAT (1851) *and* WILD HONEY (1854), *by Sweetmeat*;[20] *and of* VOIVODE (1853), *by Surplice.*

HYBLA (1846) { The Provost (1836) { The Saddler, 31 / Rebecca (Alice Hawthorn's dam)
Otisina (1837), sister to Lanercost { Liverpool, 22 / Otis, 22

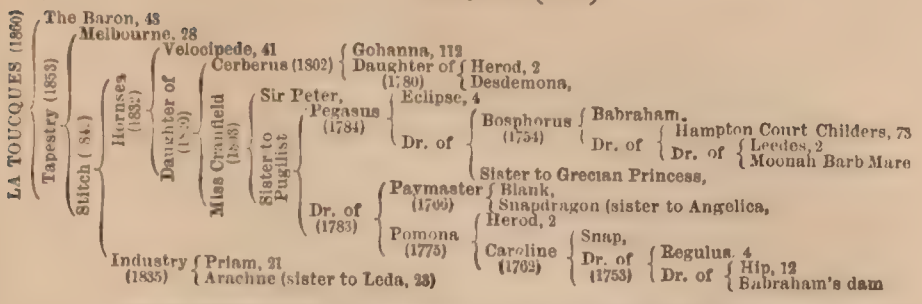
(71) THE QUEEN—*Dam of* ARCHDUCHESS (1856) *and* HETMAN (1857), *by Cossack*;[21] *of* DICTATOR (1858), ELECTOR (1859), *and* THE LIBERATOR (1861), *by The Cure*;[30] *of* VICEROY (1862) *and* ELECTION (1865), *by Lambton*;[30] *of* DENMARK (1863), *by Rataplan*;[3] *and of* LADY DE VERE (1864), *by St. Albans.*[34]



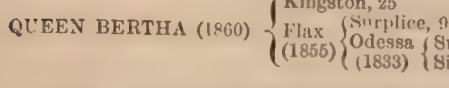
(72) BURLESQUE—*Dam of* BALMORAL (1851), *by Lanercost*;[22] *of* POLMOODIE (1853), *by Melbourne*;[28] *of* CAMIOLA (1854), *by Windhound*;[38] *of* BUCKSTONE (1859), *by Voltigeur*;[23] *and of* MASQUERADE (1861), *by Lambourn.*

BURLESQUE (1845) { Touchstone, 38 / Maid of Honour, 48

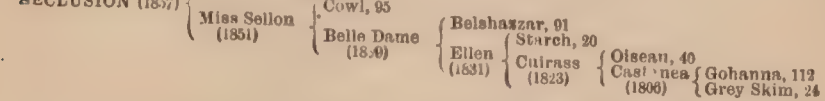
(73) LA TOUCQUES (1860).



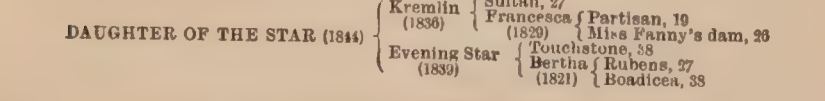
(74) QUEEN BERTHA—*Dam of* GERTRUDE (1867), *by Saunterer*;[29] *of* QUEEN'S MESSENGER *by Trumpeter*,[91] *and of* PALADIN *by Fitzroland.*



(75) SECLUSION—*Dam of* THE HERMIT (1864), CHANOINESSE (1866), *and* RELIGIEUSE (1867), *by Newminster.*[90]



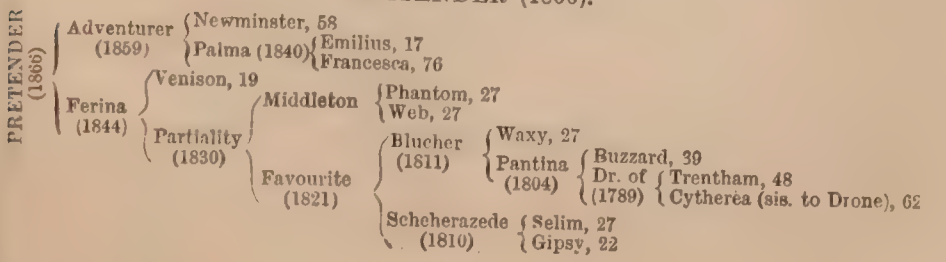
(76) DAUGHTER OF THE STAR—*Dam of* HIPPOLYTE (1860), HIPPOLYTA (1861) *and* HIPPIA (1864), *by King Tom.*[33]



(77) ELLER—*Dam of* FORMOSA (1865), *by Buccaneer.*[42]

(78) ELLERDALE—*Sister to* COLSTERDALE (1848) *and* FAIRTHORN (1850); *and Dam of* ELLERMIRE (1852), *by Chanticleer*;[100] *of* ELLINGTON (1853), GILDEMIRE (1855), *and* ELLERTON (1858), *by The Flying Dutchman*;[22] *of* SUMMERSIDE (1856), *and* NUGGET (1860), *by West Australian*;[28] *and of* HARCOURT (1861), *by Stockwell.*[33]

(79) PRETENDER (1866).



(80) SALAMANCA—*Dam of* ARAPELLE (1864), ALOSINDA (1865), *and* PERO GOMEZ (1866), *by Beadsman*;[3] *and of* SALAMIS (1867), *by Asteroid.*

SALAMANCA (1856)
- Student (1851)
  - Chatham, 110
  - Daughter of (1840)
    - Laurel,
    - Pilgrim (1831)
      - Velocipede, 41
      - Miss Wilkes (1818)
        - Octavian,
        - Dr. of (1807)
          - Remembrancer (1789),
            - Pipator, 28
            - Queen Mab, 8
          - Mary, 39
- Bravery (1853)
  - Gameboy,
  - Ennui, 29

(81) LADY MACDONALD—*Dam of* QUEEN OF THE ISLES (1863), *by Weatherbit*;[2] *of* KINGSBOROUGH (1864), *by Voltigeur*;[23] *of* BOUCAN (1865) *and* BRIGANTINE (1866), *by Buccaneer*;[42] *and of* TOM-TOM (1867), *by Rataplan.*[33]

LADY MACDONALD (sister to Lord of the Isles) (1858)
- Touchstone, 45
- Fair Helen, 46

(82) CONTESSINA—*Dam of* GAMENUT (1795) *and* CONSTANTIA (1796), *by Walnut*;[3] *and of* SIR HARRY DIMSDALE (1800), *by Sir Peter.*

CONTESSINA (1787)
- Y. Marske,
- Tuberose (1772)
  - Herod, 2
  - Grey Starling (1745)
    - Starling,
    - Coughing Polly (1755), sister to Miss Mayes, 61

(83) NUTWITH (1840).

NUTWITH (1840)
- Tomboy, 36
- Dr. of (1816)
  - Comus, 28
  - Dr. of (1807)
    - Delpini, 13
    - Miss Muston (1790)
      - King Fergus, 17
      - Columbine
        - Aspersykes
          - Matchem, 1
          - Daughter of (1757)
            - Gower Stallion,
            - Caroline's dam,
        - Dr. of (1771)
          - Babraham Blank,
          - Tipsy (1750)
            - Starling,
            - Switch
              - Lonsdale Arabian
              - Dr. of
                - Cyprus Arabian
                - Crab's dam, 5

(84) CANEZOU—*Dam of* FAZZOLETTI (1853), *and* BASQUINE (1859), *by Orlando*;[24] *of* CAPE FLYAWAY (1857), *by the Flying Dutchman*;[42] *and of* INSPIRATION (1865), *by Newminster.*

CANEZOU (1844)
- Melbourne, 44
- Madame Pelerine (1842)
  - Velocipede, 41
  - Baleine (1825)
    - Whalebone, 27
    - Vale Royal (1810)
      - Sorcerer, 28
      - Orangeade (1803)
        - Whiskey, 15
        - Orange Bud (1788)
          - Highflyer, 17
          - Orange Girl (1777)
            - Matchem, 1
            - Red Rose (1760)
              - Babraham,
              - Dr. of
                - Blaze, 2
                - Dr. of
                  - Fox, 2
                  - Dr. of
                    - Darley Arabian
                    - Dr. of Merlin, 2

(85) CARACTACUS (1859).

CARACTACUS (1859)
- Kingston, 25
- Defenceless (1844)
  - Defence, 19
  - Dr. of (1840)
    - Cain, 39
    - Ridotto (1825)
      - Reveller, 47*a*
      - Dr. of (1811)
        - Walton, 27
        - Goosander (1805)
          - Hambletonian, 23
          - Rally, 17

(86) ZODIAC (1801).

ZODIAC (1801)
- St. George (1788)
  - Highflyer (1774)
    - Herod, 2
    - Rachel (1763)
      - Blank, by Godolphin Arabian,
      - Sister to South (1751)
        - Regulus, by Godolphin Arabian, 4
        - Sorcheels Mare,
  - Sister to Soldier (1775)
    - Eclipse (1764)
      - Marske, 4
      - Spilletta (1749)
        - Regulus, by Godolphin Arabian, 4
        - Mother Western,
    - Miss Spindleshanks (1770)
      - Omar
        - Godolphin Arabian
        - Dr. of
          - Lath (bro. to Cade) by Godolphin Arabian, 1
          - Daughter of Childers, 2
      - Dr. of
        - Starling,
        - Dr. of
          - Godolphin Arabian
          - Dr. of
            - Pelham Barb
            - Mixbury's dam, 2
- Woodpecker (1773)
  - Herod, 2
  - Miss Ramsden
    - Cade, by Godolphin Arabian, 1
    - Daughter of Lonsdal Bay Barb
- Abjvall (1788)
- Piretall (1772)
  - Eclipse (1764)
    - Marske, 4
    - Spilletta (1749)
      - Regulus, by Godolphin Arabian, 4
      - Mother Western, 4
  - Sister to Nancy
    - Blank, by Godolphin Arabian,
    - Naylor
      - Cade, by Godolphin Arabian, 1
      - Spectator's dam, 5

(87) TURNUS (1846).

- TURNUS (1846)
  - Taurus (1826)
    - Phantom, 27
    - or
    - Morisco (18.9)
      - Muley, 33
      - Aquilina (1807)
        - Eagle (1793)
          - Volunteer, 8
          - Dr. of (1785)
            - Highflyer, 180
            - Dr. of
              - Engineer, 12
              - Bay Malton's dam,
    - Katherine (1821)
      - Soothsayer, 27
      - Quadrille, 20
  - Clarissa (1835)
    - Defence, 39
    - Clara (1829)
      - Clari (1824)
        - Filho da Puta, 38
        - Smolensko, 25
        - Daughter of (1804)
          - Precipitate, 17
          - Daughter of (1788)
            - Highflyer,
            - Juno, 10

(88) CALLER OU (1858).

- CALLER OU (1858)
  - Stockwell, 33
  - Haricot (1847)
    - Lanercost 22
    - or
    - Mango (1834)
      - Emilius, 17
      - Mustard (1824)
        - Merlin,
        - Morel,
    - Queen Mary, 115

(89) MARSYAS (1851)—*Brother to* ORPHEUS (1849).

- MARSYAS (1851)
  - Orlando, 24
  - Malibran (1830)
    - Whisker, 18
    - Garcia (1823)
      - Octavian,
      - Daughter of (1806)
        - Shuttle,
        - Katherine (1798)
          - Delpini, 13
          - Dr. of
            - Paymaster,
            - Sister to Amazon
              - Le Sang (1759)
                - Changeling (bro. to Matchem, 1)
                - Duchess,
              - Dr. of (1751)
                - Rib, 13
                - Mother Western, 4

(90) VEDETTE (1857).

- VEDETTE (1857)
  - Voltigeur 28
  - D of (1849)
    - Birdcatcher, 29
    - Nan Darrell (1844)
      - Inheritor 37
      - Nell (1831)
        - Blacklock, 23
        - Madame Vestris (1818)
          - Comus, 28
          - Lisette (1806)
            - Hambletonian, 23
            - Constantia,

(91) TRUMPETER (1856).

- TRUMPETER (1856)
  - Orlando, 24
  - Cavatina (1845)
    - Redshank, 36
    - Oxygen (1828)
      - Emilius, 17
      - Whizzy (1819)
        - Rubens, 27
        - Penelope, 27

(92) NECKLACE—*Dam of* MACGREGOR (1867) *by Macaroni*;[99] *and of* MARS (1865), *by Marsyas.*

- NECKLACE (1860)
  - The Fallow Buck, 45
  - Bracelet (1852)
    - Touchstone, 38
    - Maniacle (1839)
      - Emilius, 17
      - Y. Maniac (1820)
        - Tramp, 33
        - Maniac 34

(93) WOODCRAFT—*Dam of* KINGCRAFT (1867), *by King Tom*;[33] *of* YSOLT (1868), *by Dundee*;[114] *and of* PROWESS (1869), *by Saunterer.*[29]

- WOODCRAFT (1861)
  - Voltigeur, 23
  - Daughter of (1839)
    - Venison, 19
    - Wedding Day (1842)
      - Camel, 33
      - Maccellina (1826)
        - Whisker. 18
        - Manuella,

(94) BESS LYON—*Dam of* GAMOS (1867), *by Saunterer*;[29] *of* GOLDYLOCKS (1861), *by Teddington*;[24] *of* BROWN WILLIE (1862) *and* RALLYWOOD (1863), *by Wild Dayrell*;[42] *and of* SUNNYLOCKS (1864) *and* PEARLFEATHER (1865), *by Newminster.*

- BESS LYON (1853)
  - Longbow (1849)
    - Ithuriel,
    - Miss Bowe (1834)
      - Catton, 23
      - Wagtail's dam,
  - Daughter of Tocsar (1845)
    - Bay Middleton, 27
    - Malvina (1850)
      - Oscar (1820)
        - Juniper, 41
        - Daughter of (1834)
          - Oscar (1705)
            - Saltram, 15
            - Dr. of (1784)
              - Highflyer, 17
              - Dr. of (1774)
                - Herod, 2
                - Miss Middleton
                  - Regulus, 4
                  - Camilla (1745)
                    - Son of Bay Bolton, 4
                    - Dr. of
                      - Bartlet's Childers, 4
                      - Dr. of
                        - Honeywood Arab
                        - True Blue's dam, 59
          - Dairymaid (1791)
            - Diomed, 9
            - Nelly (1787)
              - Conductor, 6
              - Peggy (sis. to Postmaster, 115)
      - Spotless (1869)
        - Walton, 27
        - Dr. of (1800)
          - Trumpator,
          - Dr. of (1793)
            - Highflyer, 17
            - Otheothea (1772)
              - Otho,
              - Dr. of (1764)
                - Snap,
                - Dr. of (1750)
                  - Regulus, 4
                  - Wildair's dam,

(95) CYPRIAN—*Dam of* JOE LOVELL (1841), *by Velocipede*; *of* SONGSTRESS (1849), *by Birdcatcher*;[29] *of* METEORA (1851), *by Melbourne*;[28] *and of* CYPRIANA (1852), *by Epirus*.[40]

CYPRIAN (1833)
- Partisan, 19
- Filho da Puta, 38
- Frailty (1821)
  - Agatha (1814)
    - Orville, 17
    - Dr. of (1803)
      - Star (1785)
        - Highflyer, 17
        - Dr. of (1774)
          - Snap,
          - Riddle (sister to Ranthos, 3)
      - Dr. of (1794)
        - Y. Marske,
        - Emma (sister to Maria,

(96) CRUCIFIX—*Dam of* SURPLICE (1845), PONTIFEX (1847), ROSARY (1849), *and* CARDINAL (1851), *by Touchstone*;[38] *of* COWL (1842), *by Bay Middleton*;[37] *of* CROZIER (1844), *by Lanercost*;[32] *of* CONSTANTINE (1850), *by Cotherstone*;[28] *and of* CHALICE (1852), *by Orlando*.[24]

CRUCIFIX (1837)
- Priam, 21
- Octaviana (1815)
  - Octavian (1807)
    - Stripling (1795)
      - Phenomenon, 12
      - Laura (1778)
        - Eclipse, 4
        - Dr. of
          - Locust
            - Crab, 5
            - Daphne's dam,
          - Lass of the Mill,
    - Dr. of
      - Oberon (1790)
        - Highflyer, 17
        - Queen Mab, 8
      - Sister to Sharper, by Ranthos, 3
  - Daughter of (1807)
    - Shuttle
      - Y. Marske,
      - Dr. of (1784)
        - Vauxhall Snap (1761)
          - Snap,
          - Cade Mare, 1
        - Hip (1775)
          - Herod, 2
          - Sister to Sophia, by Godolphin,
    - Zara (1801)
      - Delpini, 13
      - Flora
        - King Fergus, 17
        - Atalanta,

(97) EMPRESS—*Dam of* AUTOCRAT (1851), *by Bay Middleton*;[37] *and of* FEODOROWNA (1857), *by Kingston*.[25]

EMPRESS (1837)
- Emilius, 17
- Mangel Wurzel (1823)
  - Merlin (1815)
    - Castrel, 39
    - Miss Newton
      - Delpini, 27
      - Tipple Cyder, 27
  - Morel (1805)
    - Sorcerer, 28
    - Hornby Lass (1796)
      - Buzzard, 39
      - Puzzle (1778)
        - Matchem, 1
        - Princess (1769)
          - Herod, 2
          - Julia,

(98) OXFORD—*Sire of* THE STUDENT (1862), *out of Blanche of Middlebie*.[38]

OXFORD (1857)
- Irish Birdcatcher, 29
- Honey Dear (1844)
  - Plenipotentiary, 17
  - My Dear (1841)
    - Bay Middleton, 27
    - Miss Letty, 26

(99) MACARONI (1860).

MACARONI (1860)
- Sweetmeat, 20
- Jocose (1843)
  - Pantaloon, 39
  - Banter, 38

(100) WHIM—*Dam of* CHANTICLEER (1843), *by Birdcatcher*.[29]

WHIM (1832)
- Drone (1823)
  - Master Robert (1811)
    - Buffer (1798)
      - Prizefighter 1784
        - Florizel, 9
        - Promise,
      - Escape's dam,
    - Spinster
      - Shuttle,
      - Dr. of
        - Sir Peter,
        - Bab (1787)
          - Bourdeaux (bro. to Florizel, 9)
          - Speranza (sis. to Saltram, 15)
  - Dr. of (1817)
    - Sir W. Raleigh (1801)
      - Waxy, 27
      - Woodcot,
    - Miss Tooley, 18
- Kiss (1827)
  - Waxy Pope (1806)
    - Waxy, 27
    - Prunella,
  - Dr. of (1810)
    - Champion (1797)
      - Pot 8 os, 27
      - Huncamunca,
    - Brown Fanny (1799)
      - Maximin
      - Dr. of
        - Highflyer, 17
        - Matchem Mare, 2

(101) PRIMA DONNA—*Dam of* DRAYTON (1837), *by Muley*.[40]

PRIMA DONNA (1821)
- Soothsayer, 27
- Tippitywitchet (1808)
  - Waxy, 27
  - Hare (1794)
    - Sweetbriar,
    - Dr. of (1786)
      - Justice (1774)
        - Herod, 2
        - Curiosity,
      - Dr. of (1777)
        - Chymist (brother to Dux,
        - Dr. of
          - South,
          - Babraham Mare,

(102) **SIR TATTON SYKES (1843).**

- SIR TATTON SYKES (1843)
  - Melbourne, 28
  - Daughter of (1836)
    - Margrave (1829)
      - Muley, 40
      - Dr. of (1815)
        - Election, 24
        - Fair Helen (1808)
          - Hambletonian, 23
          - Helen (1801)
            - Delpini, 13
            - Rosalind, 41
    - Patty Primrose (1830)
      - Confederate (1821)
        - Comus, 28
        - Maritornes (1813)
          - Cervantes, 28
          - Sally (sis. to Fanny, 23)
      - Sybil (1822)
        - Interpreter (1815)
          - Soothsayer, 27
          - Blowing (1803)
            - Buzzard, 39
            - Dr. of (1796)
              - Pot 8 os, 27
              - Maid of all Work, 35
        - Galatea (1816)
          - Amadis, 22
          - Paulina, 27

(103) GRACE DARLING—*Dam of* THE HERO (1843), *by Chesterfield* (*brother Crucifix*);[95] *and of* AMAZON (1850), *by Touchstone.*[38]

- GRACE DARLING (1832)
  - Defence, 10
  - Daughter of (1821)
    - Don Cossack (1810)
      - Haphazard, 38
      - Alderney (1800)
        - Skyscraper, 38
        - Cælia (1790)
          - Volunteer, 8
          - Sister to Pharamond
            - Highflyer, 17
            - Giantess,
    - Mistake (1803)
      - Waxy, 27
      - Woodcot (1796)
        - Mentor (1734)
          - Justice, 101
          - Sweethriar's dam,
        - Macaria (1780)
          - Herod, 2
          - Titania (1760)
            - Shakespeare,
            - Dr. of
              - Cade, 1
              - Sis. to Miss Partner, 1

(104) RUBY—*Dam of* CORONATION (1838), *by Sir Hercules.*[29]

- RUBY (1825)
  - Rubens, 27
  - Dr. of (1812)
    - Williamson's Ditto, 27
    - Agnes (1805)
      - Shuttle, 20
      - Dr. of (1788)
        - Highflyer, 17
        - Dr. of (1779)
          - Goldfinder,
          - Lady Bolingbroke
            - Squirrel, 62
            - Cypron, 1

(105) EQUATION—*Dam of* DIOPHANTUS (1858), *by Orlando.*[24]

- EQUATION (1839)
  - Emilius, 17
  - Maria (1827), sister to Emma (Mowerina's dam), 28

(106) RUFINA (1821)—*Sister to* VELOCIPEDE,[41] *and Dam of* RATCATCHER (1830), *by Langar.*[40]

(107) LOUISA—*Dam of* JERRY (1821), *by Smolensko.*[26]

- LOUISA (1813)
  - Orville, 17
  - Thomasina (1804)
    - Timothy (1794)
      - Delpini, 13
      - Cora (1777)
        - Matchem, 1
        - Dr. of
          - Turk (1763)
            - Regulus, 4
            - Dr. of
              - Crab, 5
              - Childers Mare, 2
          - Dr. of
            - Cub (1730)
              - Fox, 2
              - Warlock Galloway,
            - Dr. of
              - Allworthy (1744)
                - Crab, 5
                - Feather's dam, 11
              - Dr. of
                - Starling,
                - Dr. of
                  - Bloody Buttocks
                  - Brocklesby,
    - Violet,

(108) VAT—*Dam of* VATICAN (1846), *by Venison.*[19]

- VAT (1826)
  - Langar, 40
  - Wire (sister to Whalebone), 33

(109) IOLE—*Dam of* IDLEBOY (1845), *by Harkaway.*[18]

- IOLE (1839)
  - Sir Hercules, 29
  - Cardinal Cape (1832)
    - Sultan, 27
    - Dulcinea (1816)
      - Cervantes, 28
      - Regina (1800)
        - Moorcock (1791)
          - Highflyer, 17
          - Sister to Conductor, 6
        - Rally, 17

(110) HESTER—*Dam of* CHATHAM (1839), *by The Colonel*;[27] *and of* PALMYRA (1838), *by Sultan.*[27]

- HESTER (1832)
  - Camel, 38
  - Monimia (1821)
    - Muley, 33
    - Sister to Petworth (1796)
      - Precipitate, 17
      - Dr. of (1787)
        - Woodpecker, 39
        - Sister to Juniper (1773)
          - Snap,
          - Y. Marske's dam,

(111) TAGLIONI—*Dam of* RETRIEVER (1836), *and* PRIDE OF KILDARE (1841), *by Recovery* (*son of Emilius*); *of* TEARAWAY (1838), *by Voltaire*;[23] *of* FIREAWAY (1839), *by Freney*; *of* CLEAR-THE-WAY (1842), *and* DANCEAWAY (1843), *by Harkaway.*[18]

- TAGLIONI (1827)
  - Whisker, 18
  - Sister to Coronation (1822)
    - Catton, 22
    - Daughter of (1807)
      - Paynator, 39
      - Violet,

(112) COLLEEN DHAS—*Dam of* VANQUISHER (1861), *by Kingston.*[35]

- COLLEEN DHAS (1842)
  - Rust (1830)
    - Master Robert, 100
    - Vermilion (1821)
      - Bobadil (1813)
        - Rubens, 27
        - Dr. of (1795)
          - Skyscraper, 38
          - Isabel (1787)
            - Woodpecker, 39
            - Nancy (1763)
              - Blank,
              - Naylor
                - Cade, 1
                - Spectator's dam, 5
      - Wire (sister to Whalebone, 38)
  - Annie (1827)
    - Wanderer (1811)
      - Gohanna (1790)
        - Mercury, 8
        - Daughter of (1779)
          - Herod, 2
          - Maiden, 3
      - Catherine (sister to Y. Camilla,
    - Caroline (1817)
      - Whalebone, 38
      - Marianne (1798)
        - Mufti (1772)
          - Damascus Arabian
          - Sister to Sophia, 83
        - Maria (1783)
          - Telemachus (brother to Expectation,
          - à la Grecque (1763)
            - Regulus, 4
            - Dr. of
              - Allworthy, 107
              - Dr. of
                - Starling,
                - Dairy Maid,

(113) ISOLINE—*Dam of* GOODWOOD (1866), *by Macaroni.*[99]

- ISOLINE (1800)
  - Ethelbert (1850)
    - Faugh-a-Ballagh, 29
    - Espoir (1841)
      - Liverpool, 22
      - Espérance (1836)
        - Lapdog (1823), brother to Twatty, 57
        - Grisette (1825)
          - Merlin,
          - Coquette (1814)
            - Dick Andrews,
            - Vanity (1803)
              - Buzzard, 39
              - Dabchick (1798)
                - Pot 8 os,
                - Drab (1791)
                - Highflyer, 17
                - Hero (1774)
                - Chrysolite, 10
                - Proserpine,
  - Bassishaw (1847)
    - Prime Warden (1834)
      - Cadland (1825)
        - Andrew (1816)
          - Orville, 17
          - Morel,
        - Sorcery (1808)
          - Sorcerer, 28
          - Cobbea (1802)
            - Skyscraper, 38
            - Mrs. Barnet's dam, 38
      - Zarina (1827)
        - Morisco,
        - Ina (1821)
          - Smolensko, 25
          - Morgiana (1804)
            - Coriander,
            - Fairy (1782)
              - Highflyer, 17
              - Fairy Queen
                - Y. Cade,
                - Black Eyes (1741)
                - Crab, 5
                - Warlock Galloway,
    - Miss Whinney (1838)
      - Sir Hercules, 29
      - Euphrosyne (1819)
        - Comus, 28
        - Sister to Anna Bella
          - Shuttle, 20
          - Janetta's dam
            - Drone,
            - Contessina,

(114) MARMALADE—*Dam of* DUNDEE (1858) *and* LADY BANK (1863), *by Lord of the Isles;*[46] *of* INVERNESS (1861), *by Saunterer;*[29] *and of* ADMIRAL BLAKE (1866), *by Buccaneer.*[42]

- MARMALADE (1851)
  - Sweetmeat, 20
  - Theano (1833)
    - Waverley, 31
    - Chesub (1816)
      - Hambletonian, 23
      - Spitfire (1799)
        - Pipator, 28
        - Farewell (1792)
          - Slope (1782)
            - Highflyer, 17
            - Sister to Ganges
              - Squirrel,
              - Daughter of (1769)
                - Babraham,
                - Daughter of (175[illegible])
                - Starling
                - Spinster,
          - Dr. of
            - Y. Marske,
            - Dr. of
              - Brother to Silvio
                - Cade, 1
                - Hobgoblin Mare,
              - Sis. to Stripling, by Hutton's Spot
                - Hartley's Blind Horse,
                - Dr. of
                - Son of
                - Hutton's Grey Barb
                - Byerly Turk Mare
                - Dr. of
                - Coneyskins, 4
                - Hautboy Mare, 4

(115) BLINK BONNY—*Dam of* BOREALIS (1860), *by Newminster; and of* BLA ATHOL (1861) *and* BREADALBANE (1862), *by Stockwell.*[33]

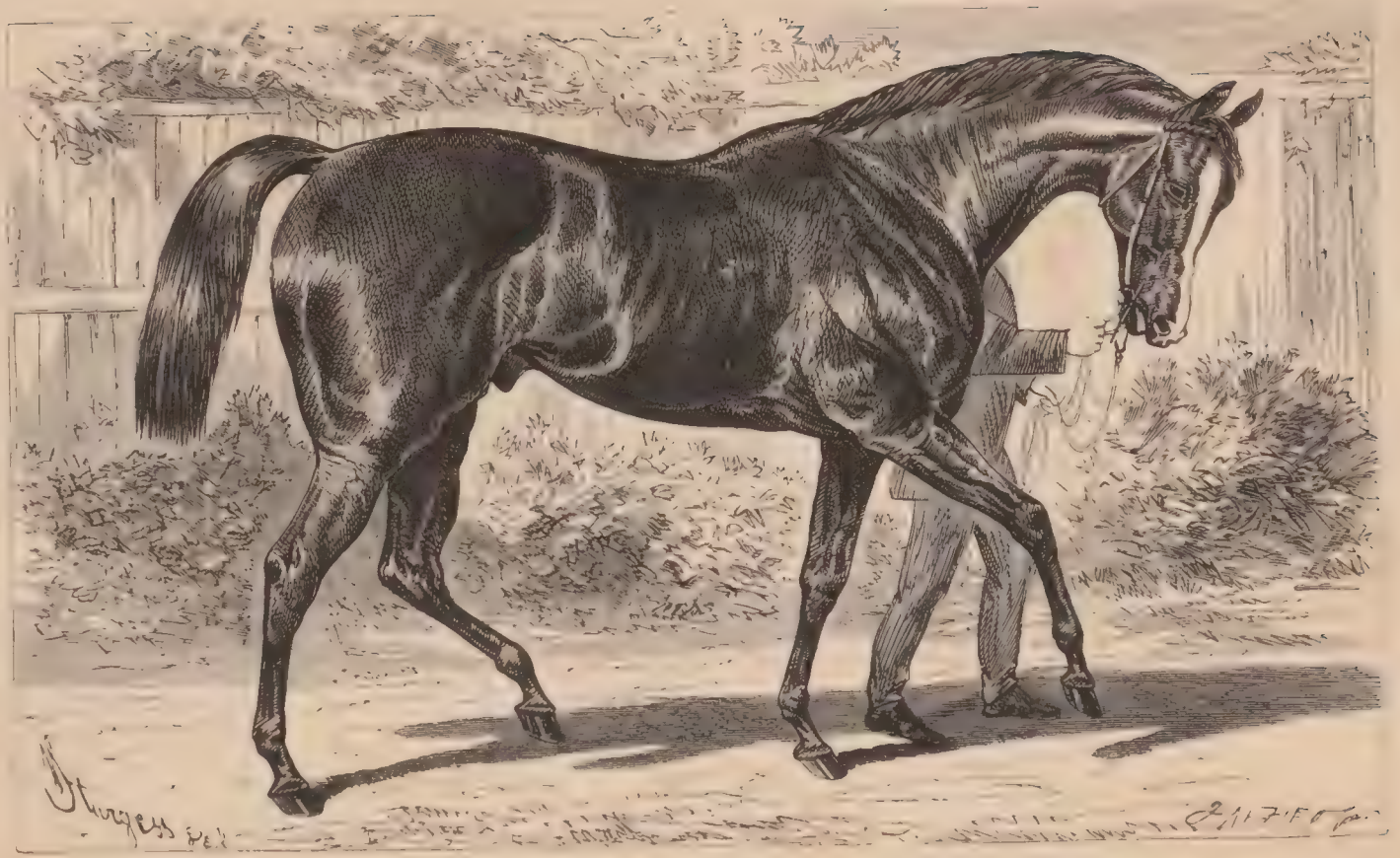
- BLINK BONNY (1854)
  - Melbourne, 28
  - Queen Mary (1843)
    - Gladiator, 20
    - Daughter of (1840)
      - Plenipotentiary, 17
      - Myrrha (1830)
        - Whalebone, 38
        - Gift (1818)
          - Y. Gohanna (1810)
            - Gohanna,
            - Grey Skim, 24
          - Sister to Grazier
            - Sir Peter,
            - Sister to Aimator
              - Trumpator,
              - Sister to Postmaster
                - Herod, 2
                - Dr. of
                - Snap,
                - Dr. of
                - Gower Stallion,
                - Childers Mare, 2

(116) THE SLAVE—*Dam of* LORD CLIFDEN (1860), *by Newminster; of* LADY CLIFDEN (1858), *by Surplice; and of* SILVERDALE (1856), *by Touchstone.*[38]

- THE SLAVE (1852)
  - Melbourne, 28
  - Volley (sister to Voltigeur, 23)

(117) CINIZELLI—*Dam of* THE MARQUIS (1859) *and* VISCOUNTESS (1858), *by Stockwell;*[33] *of* WOMERSLEY (1849), *by Birdcatcher;*[29] *and of* TOWTON (1850), MARCHIONESS (1852), MARGUERITE (1854) *and* THE PEER (1855), *by Melbourne.*[28]

- CINIZELLI (1842)
  - Touchstone, 38
  - Brocade (1834)
    - Pantaloon, 39
    - Bombasine (18.7)
      - Thunderbolt (brother to Smolensko, 25)
      - Delta (1810)
        - Alexander,
        - Isis (1805)
          - Sir Peter,
          - Ibis (1791)
            - Woodpecker, 39
            - Isabella (1783)
              - Eclipse, 4
              - Dr. of (1775)
                - Squirrel,
                - Nancy, 112



DONCASTER.

WINNER OF THE DERBY, 1873.
" " " ASCOT GOLD CUP, 1875.

WINNER OF THE GOODWOOD CUP, 1874
" ALEXANDRA PLATE, 1875

(118) DONCASTER (1870).

DONCASTER (1870)
- Stockwell, 38
- Marigold (1860)
  - Teddington, 24
  - Sister to Singapore (1851)
    - Ratan (1841)
      - Buzzard (1821)
        - Blacklock, 23
        - Miss Newton, 97
      - Dr. of (1831)
        - Picton (1819)
          - Smolensko, 25
          - Dick Andrews Mare, 35
        - Dr. of (1824)
          - Selim, 27
          - Pipator Mare, 28
    - Dr. of (1844)
      - Melbourne, 28
      - Lisbeth (1828)
        - Phantom, 27
        - Elizabeth (1822)
          - Rainbow (1808)
            - Walton, 27
            - Iris, 40
          - Belvoirina (1813)
            - Stamford, 17
            - Sis. to Silver
              - Mercury, 8
              - Herod Mare, 2

(119) FAVONIUS (1868).

FAVONIUS (1868)
- Parmesan (1857)
  - Sweetmeat, 20
  - Gruyère (1851)
    - Verulam (1833)
      - Lottery, 26
      - Wire (sis. to Whalebone and Whisker), 28
    - Jennala (1844)
      - Touchstone, 38
      - Emma (1824)
        - Whisker, 28
        - Gibside Fairy, 28
- Zephyr (1862)
  - King Tom, 33
  - Mentmore Lass (1850)
    - Melbourne, 28
    - Emerald (1841)
      - Defence (1824)
        - Whalebone, 19
        - Defiance, 19
      - Emiliana (1829)
        - Emilius, 17
        - Whisker Mare

(120) LOWLANDER (1870).

LOWLANDER (1870)
- Dalesman (1863)
  - King Tom, 33
  - Agnes (1848)
    - Pantaloon, 39
    - Black Agnes (1831)
      - Velocipede, 41
      - Daughter of (1808)
        - Walton, 27
        - Y. Noisette, 33
- Lufra (1860)
  - Windhound (1847)
    - Pantaloon, 39
    - Phryne, 38
  - Maud (1851)
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    - Venilia (1834)
      - Velocipede, 41
      - Charity (1824)
        - Tramp, 22
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(121) APOLOGY (1871).

APOLOGY (1871)
- Adventurer, 79
- Mandragora (1860)
  - Rataplan, 33
  - Manganese (1853)
    - Birdcatcher, 29
    - Moonbeam, 68

(122) MARIE STUART (1870).

MARIE STUART (1870)
- Scottish Chief, 46
- Morgan La Faye (1852)
  - Cowl (1842)
    - Bay Middleton, 27
    - Crucifix, 96
  - Miami (1844)
    - Venison, 19
    - Diversion (1838)
      - Defence, 19
      - Folly (1830)
        - Middleton (1822)
          - Phantom, 27
          - Web, 27
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(123) HANNAH (1868).

HANNAH (1868)
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  - Harkaway, 18
  - Pocahontas, 33
- Mentmore Lass (1850)
  - Melbourne, 28
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(124) CREMORNE (1869).

CREMORNE (1869)
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(125) GEORGE FREDERICK (1871).

GEORGE FREDERICK (1871) — Marsyas, 89 — Princess of Wales (1862) — Stockwell, 33 / The Bloomer, 68

(126) PRINCE CHARLIE (1869).

PRINCE CHARLIE (1869)
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(127) HOLY FRIAR (1872).

HOLY FRIAR (1872) — Hermit (1864) — Newminster, 58 / Seclusion, 75 — Thorsday (1864) — Thormanby, 64 / Manganese, 121

(128) GALOPIN (1872).

GALOPIN (1872)
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CHAPTER III.

THE POWERS AND USES OF THE MODERN RACEHORSE.

SECT. 1.—PRESENT SPEED OF THE RACEHORSE.

Y an examination of the racing time-bles as recorded of late years, it will e seen that from 13½ to 14 seconds per rlong is the highest rate of speed at-ined in any of our races above a mile, id with 8st. 7lb. carried by three-year-d horses. In 1848, Surplice and Cymba on the Derby and Oaks, each running e distance in 2 minutes and 48 seconds, exactly 14 seconds per furlong. This te has, however, been exceeded seve-l times. Blink Bonny, Beadsman, tterfly, Caractacus, Fille de l'Air, and adiateur have run faster; Kettledrum en reduced it by 5 seconds, and Blair hol's time was the same, although e weight had meanwhile been raised 8st. 10lb. The most extraordinary ee-year-old performance, however, that of Sir Tatton Sykes over the Leger course, 1 mile 6 furlongs and 2 yards in length, which he ran in 3 nutes 16 seconds, or at a rate of as rly as possible 13½ seconds per fur-g, whereas the celebrated Blink ny's time was 13¾ seconds per furlong over the Derby course, which, however, is very hilly, while Doncaster is nearly a dead level. With an additional year and the same weight, this speed has been slightly exceeded by West Australian even over a longer and far more hilly course, as at Ascot in 1854, when he defeated Kingston by a head only; running 2 miles and 4 furlongs in 4 minutes and 27 seconds, or as nearly as possible at the rate of 13⅓ seconds per furlong. This performance is the best in modern days, considering the weight, the age, and the distance; and it will compare very favourably with the often quoted exploit of Childers over the Round course in 1721, when, being six years old, he beat Almanzor and Brown Betty, carrying 9st. 2lb., and doing the distance in 6 minutes and 40 seconds, or at the rate of 14⅓ seconds per furlong. Thus, allowing him his year for the extra half mile in the course and for the 2lb. which he carried above Kingston's weight, he was outdone by the latter horse at Ascot by a second per furlong, and likewise by West Australian, at the usual allowance for his age. Again,

romparing these performances on the English turf with the much-lauded exploits of the American and French horses, it will be found that there is no cause for the fear lest our antagonists in the "go-ahead" department should deprive us of our laurels. On the 2nd of April, 1855, a time-match was run at New Orleans between Lecomte and Lexington, both four years old, in which the latter, who won, did the four miles (carrying 7st. 5lb.) in 7 minutes 19¾ seconds, or, as nearly as may be, 13¾ seconds per furlong. On Aug. 20, 1874, Fellowcraft, four years, 7st. 10lb., ran four miles at Saratoga in 7 minutes 19½ seconds. These are considered by the Americans the best times on record, and are undoubtedly creditable performances, though when weight is taken into account, not so near our best English time as would at first sight appear. On the 14th of April, Brown Dick and Arrow ran 3 miles over the New Orleans course in 5 minutes 28 seconds, or at the rate of 13⅔ seconds per furlong; the former a three-year-old, carrying 6st. 2lb., and the latter five years old, 7st. 12lb. Thus it will appear, that Kingston, of the same age as Arrow, and carrying 9st. instead of 7st. 12lb., ran 2⅓ miles at a better rate than Arrow did his 3 miles by one-third of a second per furlong; and it has been shown that our modern horses have exceeded the greatest performance of the olden times by a second per furlong, and beat the best American time by one-third of a second per furlong. The assertion, therefore, that our present horses are degenerated in their power of staying a distance under weight is wholly without foundation, since I have shown that, even taking the time of the Childers' performance as the true rate (of which there is some doubt), yet it has recently been beaten very considerably by West Australian and Kingston. Many loose assertions have been made as to the rate of the horse for a single mile in the last century, but there is not the slightest reliance to be placed upon them. That any racehorse ever ran a mile within the minute is an absurd fiction; and it is out of the question to suppose that, if Childers could not beat our modern horses over the Beacon course, he could beat them a shorter distance. Stoutness was undoubtedly the *forte* of the early racehorses; they were of small size, very wiry and low, and could unquestionably stay a distance, and could race month after month, and year after year, in a way seldom imitated in these days; but that they could, in their small compact forms, run as fast in a short spin as our modern three-year-olds is quite a fallacy, and no racing man of any experience would admit it for a moment.

The Size and Shape of the modern thorough-bred horse are superior to those of olden days, if we may judge by the portraits of them handed down to us by Stubbs, who was by far the most faithful animal-painter of the eighteenth century. In elegance of shape we beat the horses of that day very considerably, more especially in the beauty of the head and the formation of the shoulders, which have been much attended to by breeders. In size, also, there has been an immense stride made, the average height of the racehorse having been increased by at least a hand within the last century. This enlargement is, I believe, chiefly due to the Godolphin Arabian, who was the sire of Babraham, the only horse of the time that reached 16 hands, and sire or grandsire of several which were more than 15 hands—much above the average height of horses at that time—as, for instance, Fearnought, Genius, Gower Stallion, Infant, Denmark, Bolton, Cade, Chub, Lofty, and Amphion. Indeed it will be found, by an examination of the horses of that time, that out of 130 winners in the middle of the eighteenth century, there were only 18 of the height of 15 hands and upwards, of which 11 were by Godolphin or his sons, three descended from the Darley Arabian, two from the Byerly Turk, and two from other sources. I may, therefore, be assumed, with some degree of probability, that the increase in size is in great measure due to the Godolphin, in addition to the extra care and attention which the horse has received during the same time. Nevertheless, all the care and forcing in the world will not increase the size of some breeds; and unless there had been the capability of being forced, no amount of attention would have brought the horse to the present average, which may be placed at about 15 hands 1 inches.

SECT. 2.—EARLY MATURITY INCOMPATIBLE WITH DURABILITY.

THE LAWS REGULATING GROWTH AND DECAY are immutable, and it may almost always be pronounced that, in proportion to the quickness of the growth will be the early decay of the animal or vegetable being. Thus the oak is more lasting than the larch, and the elephant outlives the horse; and so it will be found that, whether in the case of the greyhound, the horse, the sheep, or the bullock, those animals which come to maturity the earliest are the first to decay, or to show signs of that stage; for in a state of domestication actual decay is rarely permitted to take place. Hence, while the breeder has his attention drawn to the production of colts which shall at two years of age be formed like old horses and be fit to compete with them for short distances, it will always result that he attains his end at a considerable sacrifice of durability, as evinced in the diminished strength of constitution, and the feeble and yielding nature of the organs of locomotion. The timber, in fact, instead of being oak is deal, and is as little to be compared in durability with the materials of which the old-fashioned horses were composed as the latter timber is with the former. It is true that even in modern days some exceptions may be adduced which seem made of as iron-like materials as Eclipse or Childers, or their contemporaries—as, for instance, Rataplan, who ran in 71 races during the four years he was on the turf; Fisherman, who was pulled out 120 times in five years; and Thormanby, who ran 15 times as a two-year-old, and was as sound as a roach when he won the Derby. Still these are the exceptions, and the vast majority of our horses are unable to put in an appearance on the race-course more than eight or ten times in the course of the season, and many not nearly so often. Both Childers and Eclipse were five years old before they were trained, and such was the usual practice in those days. As an instance of this, Miss Neesham was foaled in 1720, was first started, for the King's Plate at York, in 1726, and continued to run every year till 1731, when she was used for two seasons for breeding purposes, and produced Miss Patty. In 1733, Miss Neesham (now called Mother Neesham) won a plate at York; and again, in 1734, she won two stakes at the same place, being in her fourteenth year. Such a case is unknown in these days; and even an eight-year-old running horse is a rarity seldom met with. Beeswing, it is true, ran and won good stakes in her ninth year, but she was a *rara avis* indeed, and we may wait some time before we look upon her like again, though the Brewer and Real Jam have in still later days persevered almost as long.

RACEHORSES ARE NOT, however, to be considered as really degenerated simply because they are of earlier maturity than was formerly the case; but they are no doubt altered in character by the long-continued attention to the production of this peculiarity. The type of the racehorse is now more nearly allied to the two-year-old form, and he has become more speedy, but less lasting *in proportion to his speed.* This is easily understood, because it is impossible that a horse can maintain a high velocity for as long a time or distance as he can keep up a slower rate of gallop. I have shown that he can and does now perform the same distance in a less time than Childers, but that he can keep up his *top speed* as long as the old-fashioned horses is, I believe, untrue. A very slow horse can maintain the only rate which he can manage to reach for a long time, as compared with the fast horse; and he may safely be kept extended for the whole distance he has to go, unless this is a very long one—that is to say, if his temper is good enough to bear the trial; but the fast horse will soon burst himself if allowed or made to extend himself for any distance, and he therefore must be husbanded in some degree, for fear of the consequences. This is often exemplified in the steeplechase, wherein many stayers on the turf, like Emblem, are as stout as steel over four miles, because they are not extended till near the end of that distance.

Not only, however, is there this two-year-old type in speed, but there is also the two-year-old condition of bone and sinew; and in addition there is the early trial of both in the severe training to which the young horse is now submitted. Thus all things tend to the production of unsound and soft-constitutioned animals, and it cannot occasion surprise if the percentage of

lameness, or other infirmity, is greatly increased. It is quite true that our hunters and other horses are also earlier in coming to their full growth, and thus some advantage is gained, but I am afraid more than counterbalanced by their early decay, and by the want of durability which their legs and feet show, as evidenced by the frequency of inflamed joints and diseased feet, now so prevalent in the field and on the road. Thus, what is gained between three and five years of age is lost between ten and fifteen, and I am afraid more than lost, for undoubtedly a greater number must be bred to last a given number of years than was formerly necessary, whether for hunters, roadsters, or harness-work. Still, as I said before, the alteration is not entirely for the worse, and the earlier utility of the horse is some little set-off against his premature decay.

THE GRAND DESIDERATUM in these days is the production of a lot of thorough-bred horses calculated to get good sound roadsters and hunters. Now this is quite incompatible with the present system of breeding for the two-year-old market; and yet, while prizes, often amounting to some thousands, are within the probable reach of our best two-year-olds, it is scarcely to be expected that the owners shall be kept from grasping thereat. As, therefore, it is unlikely that the public will individually produce these much-needed horses, it is incumbent upon the Government either to establish a breeding establishment for their manufacture, or else to offer prizes of some kind which may tempt the breeder to produce them. One or the other must be done, if the horse is to be restored to its former condition of hardihood of constitution and durability of leg—qualities which are now lamentably deficient in all our breeds of modern horses.

ALTHOUGH THE THOROUGH-BRED HORSE is well fitted to compete with others in all cases where speed is the chief point of trial—as in flat-racing, steeple-chasing, hunting, &c.—yet he is not so well qualified for some kinds of harness-work, or for road-work of any kind, as the horse expressly bred for that purpose. There is no doubt that thorough-bred horses *might* be selected and bred expressly for this kind of work, and would excel all others, because originally their limbs and constitutions were at least as sound as, or perhaps even sounder than, any other class of horses; but while they are selected and bred solely for speed, without much reference to these other qualities, it is useless to expect much improvement in the latter; but, on the contrary, they may be expected to become yearly more and more soft and yielding.

There are many purposes for which the Eastern horse is wholly unfit—as, for instance, for heavy and dead pulls; here his high courage, light weight, and hasty temper are adverse to the performance of the task, and he is far excelled by the old English or modern improved cart-horse. No thorough-bred horse would try again and again at a dead pull like many of our best breeds of cart-horses; and therefore he is little calculated for work which requires this slow struggling kind of exertion. The pull of the Eastern horse, or his descendant, is a snatch; and though it may to a certain extent be modified by use, yet it can never be brought up to the standard of the English cart-horse, even if his weight of carcase and size and strength of limb could be sufficiently increased.

IT HAS THUS BEEN SHOWN that the English racehorse, as now bred, is solely useful in improving the breeds of our hunters and light road-horses; and that he, from his early maturity and decay, is to a certain extent prejudicial to the improvement of their lasting powers, in enduring the battering of our roads, which are now yearly becoming harder and harder, and thus more trying to the legs and feet. That he has been the means, however, of improving these breeds in all other respects is clear enough; and we now possess horses which are perfection in every other respect, being excellent hacks, hunters, and light carriage horses, and often all in one. This is the perfection of the horse; and if many such could be produced it would be a great advantage, because most people would like a horse which could "make himself generally useful," if such an animal could be obtained. Without high-breeding, however, this is impossible; and yet with most of our purest strains, though it is attainable, the condition in which it exists does not last long, in consequence of the effect of the hard road upon their soft legs and

contracted feet. Consequently, as I have already remarked, there is a necessity for Government interference to produce such a breed of thorough-bred horses, by careful selection, as shall give us the above three kinds of horses useful in civil life, from which may be culled a plentiful supply of cavalry horses, whenever wanted; because the very same qualities are there demanded, and what will suit the one will be equally advantageous to the other, and this is demonstrated more clearly than ever by the successes of the French horses, Gladiateur, Fille de l'Air, &c., dependent as they no doubt were upon the careful selection of sound stock to breed from by the French Government and private breeders.

Sect. 3.—The Thorough-bred Horse as Intended for Racing only.

In addition to the use of the thorough-bred horse for the purpose of improving our general stock of horses, he is incidentally employed in a pursuit which in itself is of no use to the nation or to individuals, but is carried on partly as a pastime, and too often merely as a trade. As, however, this is the only motive for the encou ragement of this variety of the horse, which is extremely useful in improving those breeds that are vitally necessary to our existence and comfort, the evil must be borne for the sake of the accompanying good; and we must be thankful to those who lay out large sums, from whatever motive, in producing those splendid specimens of the horse which are yearly brought to the post. That they are not perhaps the best possible for the purpose of breeding what is otherwise wanted I have already shown; but until the Government will take the matter up, and give us still more perfect animals, we must be satisfied with what we can get, and be content to praise the bridge which carries us safe over, even if it is not made of the very best heart of oak.

CHAPTER IV.

ESSENTIAL POINTS IN THE THOROUGH-BRED HORSE FOR RACING PURPOSES.

Sect. 1.—Purity of Blood.

Purity of Blood is a *sine quâ non* for racing purposes; but it is necessary to understand what is meant by the term "blood." It is not to be supposed that there is any real difference between the blood of the thorough-bred horse and that of the half-bred animal; and no one could discriminate between the two by any known means; the term "blood" is here synonymous with *breed*, and by purity of blood we mean purity in the breeding of the individual under consideration—that is to say, that the horse which is entirely bred from one source is pure from any mixture with others, and may be a pure Suffolk Punch, or a pure Clydesdale, or a pure thorough-bred horse. But all these terms are comparative, since there is no such animal as a perfectly pure-bred horse of any breed, whether cart-horse, hack, or racehorse; all have been produced from an admixture with other breeds, and though *now* kept as pure as possible, yet they were originally compounded from varying elements. Even the best and purest thorough-breds are stained with some slight imperfections; and therefore it is only by comparison that the word pure is applicable to them or any others. But since the thorough-bred horse, as he is called, has long been bred for racing purposes, and selections have been made with that view alone, it is reasonable to suppose that this breed is the best for that purpose, and that a strain of any other is a deviation from the clearest stream into one more muddy, and therefore impure;

the consequence is, that the animal bred from the impure source fails in some of the essential characteristics of the pure breed, and is in so far useless for this particular object. Now, in practice this is found to be the case, for in every instance it has resulted that the horse bred with the slightest deviation from the sources indicated by the Stud Book is unable to compete in lasting power with those that are entirely of that breed. Hence it is established as a rule, that for racing purposes every horse must be thoroughbred; that is, as I have already explained, of a sire and dam whose names are met with in the Stud Book.

Sect. 2.—External Form.

The External Form of the racehorse is of great importance; but there is no doubt that the axiom is correct that "the horse can run in all forms." The instances where this is so, however, are the exceptional cases, and the rule, nevertheless, is a good one which lays down that, *cæteris paribus*, the horse will be the best runner which is formed in the mould most like that of the greatest number of good racehorses. Thus, supposing it is found that out of fifty good horses forty-nine have neat heads, light necks, deep chests, oblique shoulders, long racing hind-quarters, strong hocks, &c., the presumption will be that a horse resembling those forty-nine in shape will also resemble them in speed and endurance. On the other hand, it is admitted on the turf that high-breeding is of more consequence than external shape, and that of two horses, one perfect in shape, but of an inferior strain of blood, and the other of the most winning blood but not so well formed in shape, the latter will be the most likely to perform to the satisfaction of his master on the race-course. On this principle the proverb has been framed and handed down to us, that "an ounce of blood is worth a pound of bone;" and with the above explanation such is really the case. In spite, however, of all this recognised superiority of blood, it is indisputable that for the highest degree of success there must be not only high purity of blood, and that of the most winning strains, but there must also be a frame of the most useful character, if not always of the most elegant form. Many of our very best horses have been plain, and even coarse-looking—as, for instance, most of the Melbournes, and especially that very fast horse Sir Tatton Sykes, and also Voltigeur and other descendants of Blacklock; but in spite of their plainness, all the points are good and useful, and the deficiency is in elegance, not in real utility. Nothing can exceed the goodness of the frames of Melbourne's stock; and their width of hip and general roominess of make is such as to give them enormous power and great substance of muscle, which are particularly serviceable in the mares got by him—a class of animals more often deficient in these points than colts. From this it results that the distinction must always be made between elegance and utility; and it must be remembered, that while the former pleases the eye, it is not really conductive to victory; whilst, on the other hand, the ragged hips and general bony frames of some horses are not so elegant to the eye, but they give strong attachment to the moving powers, and also allow the muscular system to be largely developed on their foundation.

The following are the generally admitted good points by which the racehorse of high caste is distinguished from the common herd.

The Height of the racehorse varies from 15 hands to 16½ hands, or even 17 hands; but the general height of our best horses is about 15 hands 3 inches. Few first-class performers have exceeded the height of Surplice, who was 16 hands 1 inch, as were also Wild Dayrell and Stockwell. Sir Tatton Sykes was 15½ hands; and between his height and that of Surplice may be ranged every great winner for the last ten or twelve years. This average, therefore, may fairly be laid down as the best height for the racehorse, though it cannot be denied that for some small and confined courses—as, for instance, that of Chester—a smaller horse of little more than 15 hands height has a better chance, as being more capable of turning round the constantly recurring angles or bends.

The Head and Neck should be characterized by *lightness*, which is essential for this department. Whatever is unnecessary is so much dead weight, and we know the effect of 7 lb. in impeding the horse over a distance of

ground. Now 7 lb. are easily bestowed upon a neck which may differ in at least 20 lb. or 30 lb. between the two extremes of lightness and excessive weight. Thus it may be considered as indubitable that whatever is met with in the head and neck which is not necessary for the peculiar purposes of the racehorse, is so much weight thrown away, and yet it must be carried by the horse. Such is the general character of this part; but in detail the HEAD should be lean about the jaw, yet with a full development of forehead, which should be convex and wide, so as to contain within the skull a good volume of brain. Supposing this fulness to exist, all the rest of the head may be as fine as possible; the jaws being reduced to a fine muzzle, with a slight hollowing out in front, but with a width between the two sides of the lower jaw where it joins the neck, so as to allow plenty of room for the top of the windpipe when the neck is bent. The ears should be pricked and fine, but not too short; eyes full and spirited; nostrils large, and capable of being well dilated when at full speed, which is easily tested by the gallop, after which they ought to stand out firmly, and so as to show the internal lining fully. The NECK should be muscular and yet light; the windpipe loose and separate from the neck—that is, not too tightly bound down by the *fascia*, or membrane of the neck. The crest should be thin and wiry, not thick and loaded, as is often seen in coarse stallions, or even in some mares. Between the two extremes of the ewe-neck and its opposite there are many degrees, but for racing purposes I should prefer, of the two, the former to the latter; for few horses can go well with their necks bent so as to draw the chin to the bosom. Here, however, as in most other cases, the happy medium is to be desired, which is that exhibited in the portrait of Kingston that is given in page 363; though perhaps it is a little more loaded than is either desirable or belonging to the original. His head and general form are those which may be selected as the pattern for the racehorse, for though he was often considered as too light in the girth, he was, in my opinion, just what a racehorse should be in that department, which is more frequently too deep than the reverse; and his well-known stoutness verifies the opinion.

THE BODY, OR MIDDLE PIECE, should be moderately long, and not too much confined between the last rib and the hip-bone. So long as the last or back-ribs are deep, it is not of so much importance that they should be closely connected to the hip-bone, for such a shape shortens the stride; and though it enables the horse to carry great weight, yet it prevents him from attaining a high rate of speed. The BACK itself should be muscular, and the hips so wide as to allow of a good development of the muscular department. The WITHERS may rise gently, but not too high, with that thin razor-like elevation which many people call a good shoulder, but which really has nothing to do with that part, and is only an annoyance to the saddler, who has to prevent its being pinched by the saddle. The CHEST itself should be well developed, but not too wide and deep: no horse can go a distance without a fair "bellows-room;" but supposing the heart to be sound and of good quality, the amount of lung will suffice which may be contained in a medium-sized chest, and all above that is wasted, and is extra weight. Many of our best-winded horses have had medium-sized chests; and some of the very worst have been furnished with room enough for a pair of blacksmith's bellows to play in. If the heart only does its duty well the lungs can always furnish sufficient air; and we know that when frequently renewed, and with sufficient power, the blood is aerated as fast as it is propelled, and the chief difficulty lies in this power of propulsion, which resides in the heart alone. If the chest be too wide it materially affects the action of the forelegs, and therefore in every point of view, theoretically and practically, there is a happy medium beween the too great contraction in this department and the heavy, wide, lumbering chests sometimes seen even in the thorough-bred racehorse, especially when reared upon rich succulent herbage, more fitted for the bullock than the Eastern horse. In the formation of the HIPS, the essential point is length and breadth of bone for muscular attachment, and it matters little whether the croup droops a little, or is pretty straight and level, so that there is a good length from the hip to

the haunch-bone; the line between which two points may either be nearly horizontal or forming a considerable angle with the ground; but still in both cases it should be a long line, and the longer it is the more muscular substance is attached to it, and the greater leverage will the muscles have. All these points are still further explained in the chapter on the Anatomy of the Horse, which see for the details of those parts.

The Fore-Quarter, consisting of the shoulder, upper and lower arm and leg and foot, should be well set on to the chest; and the shoulder-blade should lie obliquely on the side of that part, with a full development of muscle to move it and thrust it well forward in the gallop. Obliquity is of the greatest importance, acting as a spring in taking off the shock of the gallop or leap, and also giving a longer attachment to the muscles, and in addition enabling them to act with more leverage upon the arm and leg. It will be seen, by a reference to the skeleton, that the shoulder-blade does not reach the top of the withers, and that those bones forming that part have nothing to do with the shoulder itself; hence, many high-withered horses have bad and weak shoulders, and some very upright ones; whilst, on the other hand, many low-withered horses have very oblique and powerful shoulders, and such as to give great facility and pliability to the fore extremity. The Shoulder should be very muscular, without being overdone or loaded, and so formed as to play freely in the action of the horse. The point of the shoulder, which is the joint corresponding to the human shoulder, should be free from raggedness, but not too flat; a certain degree of development of the bony parts is desirable, but more than this leads to a defect, and impedes the action of this important part. The Upper Arm, between this joint and the elbow, should be long, and well clothed with muscles; the elbow set on quite straight, and not tied to the chest; the Lower Arm muscular and long; knees broad and strong, with the bony projection behind well developed; legs flat, and showing the suspensory ligament large and free; pasterns long enough without being weak; and the feet sound, and neither too large nor too small, and unattended with any degree of contraction, which is the bane of the thorough-bred horse.

The Hind-Quarter is the chief agent in propulsion, and is therefore of the utmost consequence in attaining high speed. It is often asserted that the oblique shoulder is the grand requisite in this object, and that it is the part upon which speed mainly depends, and in which it may be said to reside. This is to some extent true, because there can be no doubt that with a loaded shoulder high speed is impracticable; for however powerfully the body may be propelled, yet when the fore-quarter touches the ground it does not bound off again as smartly as it ought to do, and the pace is consequently slow. This position may be illustrated by an experiment with two balls, one of india-rubber, and the other, of corresponding size and weight, made of any inelastic material, such as wax. Now suppose these two balls propelled with equal power along a piece of fine turf at such an angle as to strike its surface, and rebound again and again—the elastic ball would at first only equal the other in speed, but it would soon outstrip it, because its elasticity would carry on the original propelling power, while the dull inelastic nature of the wax ball would speedily cause it to adhere to its mother earth. Just so with the elastic shoulder—it receives the resistance of the earth but reacts upon it, and loses very little of the power given by the stroke of the hind-quarter, which, nevertheless, must be strong and quick, or else there is nothing for the shoulder to receive and transmit. For the full action of the hind-quarter two things are necessary, viz.:—first, length and volume of muscle; and secondly, length of leverage upon which that muscle may act. Hence, all the bones comprising the hind-quarter should be long, but the comparative length must vary a good deal, in order that the parts upon which the muscles lie may be long, rather than those connected with the tendons, which are mere ropes, and have no propelling power residing in them, but only transmit that which they derive from the muscles themselves. Thus, the Hips should be long and wide, and the two upper divisions of the limb—viz., the Stifle and Lower Thigh—should be long, strong, and fully developed. By this formation

the stifle-joint is brought well forward, and there is a considerable angle between these two divisions. The HOCK should be bony and strong, free from gum or spavin, and the point long, and so set on as to be free from weakness at the situation of curb.

In examining the hind-quarter of a horse to judge of its muscular development, the animal should not be looked at sideways, but his tail should be raised, and it should be ascertained that the muscles of the two limbs meet together below the *anus*, which should be in fact well supported by them, and not left loose, and, as it were, in a deep and flaccid hollow. The outline of the outer part of the thigh should be full, and in ordinary horses the muscle should swell out beyond the level of the point of the hip. This fulness however, is not often seen to this extent in the thorough-bred horse until he has arrived at mature age, and is taken out of training. The bones below the hock should be flat, and free from adhesions; the ligaments and tendons fully developed, and standing out free from the bone; and the joints well formed and wide, yet without any diseased enlargement; the pasterns should be moderately long and oblique; the bones of good size; and lastly, the feet should correspond with those already alluded to in the anterior extremity.

THE TOTALITY of these points should be in proportion to one another—that is to say, the formation of the horse should be "true." He should not have long well-developed hind-quarters with an upright, weak, or confined fore-quarter. Nor will the converse serve; for however well formed the shoulder may be, the horse will not go well unless he has a similar formation in the propellers. It is of great importance, therefore, that the racehorse should have all his various points in true relative development; and that there shall not be the hind-quarter of a long racing-like horse with the thick confined shoulder which would suit a stride less reaching in its nature.

SECT. 3.—THE COLOUR, SKIN, HAIR, &c.

THE COLOUR of the thorough-bred horse is now generally bay, brown, or chestnut, one or other of which will occur in ninety-nine cases out of a hundred. Grey is not common, but sometimes appears, as in the case of Chanticleer and some of his stock. Black also occasionally makes its appearance, as in Saunterer, but not more frequently than grey. Roans are still more rare, but are sometimes met with, as in Warlock and Rapid Rhone. Duns, sorrels, &c., are now quite exploded, and the first five colours may be said to complete the list of colours usually seen on the race-course. Sometimes these colours are mixed with a good deal of white, in the shape of blazes on the face, or white legs and feet; or even both may occur, and the horse may have little more than his body of a brown, bay, or chestnut. Most people, however, prefer the self colour, with as little white as possible; and nothing but the great success of a horse's stock would induce breeders to resort to him if they were largely endowed with white. Grey hairs mixed in the coat, as in the Venisons, are rather approved of than otherwise; but they do not amount to a roan, in which the grey hairs equal, or even more than that, the other colour mixed with them.

THE TEXTURE of the coat and skin is a great proof of high breeding, and in the absence of the pedigree would be highly regarded; but when that is satisfactory it is of no use descending to the examination of an inferior proof; and therefore, except as a *sign of health*, the skin is seldom considered. In all thorough-bred horses, however, it is thinner, and the hair more silky than in common breeds; and the veins are more apparent under the skin, partly from its thinness, but also from their extra size and number of branches. This network of veins is of importance in allowing the circulation to be carried on during high exertions, when, if the blood could not accumulate in them, it would often choke the deep vessels of the heart and lungs; but by collecting on the surface great relief is afforded, and the horse is able to maintain such a high and long-continued speed as would be impracticable without their help. Hence, these points are not useful as a mere mark of breed, but as essential to the very purpose for which that breed was established.

THE MANE AND TAIL should be silky and not curly, though a slight wave is often seen. A decided curl is almost

invariably a mark of degradation, and shows a stain in the pedigree as clearly as any sign can do. Here, however, as in other cases, the clear tracing of that all-powerful proof of breeding will upset all reasoning founded upon inferior data. The setting on of the tail is often regarded as of great importance, but it is chiefly with reference to appearances; for the horse is not dependent for action or power upon this appendage. Nor is strength of dock of any value as a sign, and I have known many very stout horses with flaccid and loosely pendent tails.

Sect. 4.—Varieties in Form.

Between the Form of West Australian and that of a common country plate-horse there is a very wide difference, and scarcely any weight will bring them together short of that which would crush the former to the earth. There are numberless cases in which four stone might be carried by a first-class horse, over and above the feather-weight placed on a very slow horse, and yet the horse in high form will run away from the plater, who cannot by any means get over the ground faster than the rate at which he can carry a fair average weight. An examination of the handicap-lists will show, that between their top and bottom there is generally a difference of four stone; and though this difference is often effectual in keeping back the best horses, it does not always allow the lightest weights to win, but rather those which are the lightest as compared with their real powers. But it is also well known that certain horses can run half a mile at high speed, and no more; others a mile; others again, a mile and a half or two miles; whilst another class, now less common than formerly, require a distance of three or four miles to develop their powers, as compared with ordinary horses. These peculiarities are generally hereditary, though not always so; but still, when the blood is known, it may generally be surmised that the individual will or will not stay a distance. When the cross in question is stout on one side and flashy on the other, it is not easy to guess to which the young scion may lean; but in those cases where a horse is bred from sires and dams both of stout blood, or the reverse, the experienced hand may, in almost all cases, decide in advance upon the properties of the son or daughter, as far as staying properties are concerned. Again, some horses of compact frames, with short backs and strong quarters, may be expected to climb a hill without difficulty, especially if of stout blood; and, again, others of lathy frames, with long but weak points, and a great deal of daylight under them, may win over the flat for a mile, or a mile and a quarter, but can never climb a hill or get beyond the above distance over a flat. All these points should be carefully studied by the breeder in getting together his breeding-stock, and by the owner in deciding upon the stakes for which he shall enter his young produce.

CHAPTER V.

THE ESTABLISHMENT OF A RACING-STUD.

Sect. 1.—Breeding *versus* Purchase.

When once a determination has been arrived at to enter upon the exciting pursuit which is now under consideration, the next thing to be done is to discuss the best mode of carrying out this resolution. There are two modes of getting together a stud, one of which consists in breeding the horses requisite for the sport, and the other in buying them at the age of one, two, three, or four years, according to circumstances. The choice must be guided greatly by the kind of stake which is to be competed for, and the judgment of the proprietor or his usual adviser; also upon the facilities of breeding commanded by him, for without a breeding farm of such land as is suited for rearing horses, it is useless to attempt this mode of proceeding. Either course requires great skill and judgment, and it is seldom that these are acquired until large sums of money have been expended, and the desire for success has been blunted by the knowledge that it is not always the reward of desert. Still, while the passion exists, it is only fair that it should be allowed free scope; and if the turf were only weeded of those of its present supporters who disgrace it, it might regain its healthy tone, and encourage honourable men again to enter its charmed circle and compete for its honours. If the ambition of the young turfite is high, and he intends to enter into the contest for the "blue riband," he must make up his mind without doubt to breed for himself, for the cases are very rare indeed of success in this particular class of races with horses bought after they have arrived at an age to be tried. Some have been sold as yearlings, but the majority of Derby winners have been bred by those who owned them at the time of running. Besides, when a good-looking colt of fashionable blood is for sale, he is generally bought at a price which would make a stud of such horses rather an expensive affair; and experience tells us that very few of these high-priced yearlings have paid for the oats they have eaten. A man having one mare may breed, train, and run a Wild Dayrell as an exceptional case, but few such instances occur, and the necessity for more than one string to the bow is recognised by all those who have entered the arena. If, however, the intended contests are to be confined to country meetings for specific local purposes, or to other small undertakings, a few horses calculated for them will be easily procured at a comparatively low cost, and with a fair chance of success. Unlike the greyhound, the horse may always be tried with a very near approximation to his real merits, because in every case he will do his best in his then form, and there is no chance (except when the temper is bad) of the horse afterwards turning out very different to his performance on the day of trial. It should also be known, that for common plating purposes a horse may be obtained whose speed is not quite of the first class, but whose constitution and legs are so enduring as to allow of his being raced much more frequently than his highly-organized compeer of faster form and more irritable temperament. Thus the tyro may, at comparatively little expense, indulge his appetite for excitement by competing in country races with a limited stud, and yet a fair prospect of success, and with a certainty of avoiding those

heavy expenses which are attendant upon a numerous stud, and the requisites for success at Newmarket or Epsom. Few people would undertake the more expensive gratification of the taste for racing without first gaining experience in the minor events; and I should strongly advise every beginner to keep himself free from those extravagant outlays which are now absolutely necessary to success in the higher departments of racing. Let him only attempt to master the alphabet, and he will find his hands full enough nowadays, when even the small events are filled with the offsets of our great races. Indeed, it is extraordinary how well prepared are the horses at all our second-rate meetings, and how little difference there is in appearance between the horses there met with and those running at Epsom or Doncaster.

For Second-rate Meetings, then, it will suffice to pick up horses which are sold as unfit for the great events, as being somewhat troubled with "the slows," and yet stout and honest, with good sound legs and feet. These horses will answer every purpose in company of the same kind, and will pick up stakes which are confined to horses which have never won more than a certain sum; or they will suit selling stakes, where they may be entered to be sold for a low sum, in proportion to their cost and value. These colts or fillies may be estimated at their precise value, if they have appeared in public *and are sound;* but if only tried in private it is a perfect lottery, unless a trial can be obtained with a horse in an equally good state of preparation, and whose form is well known. If either of these modes of estimating the value of the proposed purchase can be obtained, and there is no doubt of the soundness of the animal, the young turfite may venture to invest from 50*l.* to 200*l.* or 300*l.* according to the estimate he has formed, and the advice he has received from his trainer; for, of course, he will not venture to act upon his own unassisted judgment. Racehorses are sold without a warranty of soundness, and are taken with all faults, so that it requires great caution to ascertain their usefulness as regards this important particular. Few horses of any kind are without a "loose screw" somewhere or other, and this is especially true of racehorses, which require every part of the animal economy to be as perfect as possible. Nothing can be more trying than a severe preparation over summer ground, and the races run over some of our courses are enough to destroy anything but legs of steel. It is no wonder, therefore, that so many fail; and it behoves the purchaser to be very careful lest he should lay out his money badly, and be saddled with an infirm brute which cannot stand a severe preparation, much less the constant public contests which he wishes him to appear in. When, however, he has done all in his power to ascertain his fitness, and is satisfied, he may procure him, with one or more companions of the same stamp, and hand them over to a public trainer, or to his own private servant.

Sect. 2.—Requisites for a Small Stud.

A Horse to Lead the Gallops will be wanted in any case; and if the training establishment is a private one he must be procured and used solely for that purpose; but in public stables that is part of the engagement of the trainer, who usually manages, in small strings, to find a horse of some kind for the purpose, or, if a single horse, to let him go in with others in their gallops. In all cases of importance, however, whether in public or private stables, a horse of this kind must be specially set apart to lead the others; and is found by the owner, and separately charged for by the public trainer.

A Boy to Each Horse is also needed, and may be either found by the owner or trainer, as agreed upon; but, in all cases, each horse has its own lad, who has exclusive care of him, dresses him, and rides him at exercise. It is astonishing to see these light-weights with their horses, how they manage to ride them and hold them together; but by early education and constant practice, and partly by their being so constantly with their charges as to make them own them as part of themselves, they contrive to do more than could otherwise be accounted for. It is very desirable to get these lads as light as possible, because of the effect of weight upon the horse's legs; but sometimes the temper of the horse is so bad as to

require more than the ordinary control of a racing stable-lad, and then an older and more powerful rider has to take the horse in hand, and his legs must take the consequences. After a time, however, the light-weight may try him again, and may now succeed in riding him without difficulty. This is one of the points in which the large establishments have a great advantage, as they can change the lads to suit particular horses; and among their large numbers they have generally a few lads who can ride anything with four legs.

THIS SMALL RACING-STUD may therefore be assumed to consist of a few drafts from the large breeding-studs, which have been selected with great care, by the advice of the trainer, aided also by the examination of a good veterinary surgeon, who may be consulted on the question of soundness. I shall now go on to the consideration of their preparation for racing—usually called training—and shall suppose that it is to be conducted in private, with the aid of a good training-groom, and such ground as is available for the purpose.

CHAPTER VI.

TRAINING.

SECT. 1.—THE GROUND NECESSARY.

WITHOUT GOOD TRAINING GROUND it is quite out of the question to expect horses to be brought to the post fit to run. It may be supposed by ignorant persons that their condition might be perfected on any ground, but this is a fallacy, since the state of the legs and feet must be a source of continual anxiety to the trainer; for, unless he can keep these parts in good order, it is impossible to regulate the work as would be otherwise desirable; and hence from the very outset difficulties are thrown in the way of the horse's work, and he is not finally brought out as he should be. Let, therefore, no pains be spared to procure ground of the proper character, and of such a varying nature that part at least shall always be in a fit state to train on. Some land scarcely ever gets hard, and is yet never wet, and this is invaluable for the purpose; but such ground is generally appropriated, on account of its great value, and few private stables can have access to it. In many situations there is down land, of good quality in wet seasons, being high and dry; and there is also often within reach a low and mossy tract of land, suitable to gallops in dry summer weather. This is as well adapted to the purpose of training as the best ground in the world, and the only objection is that it is generally free from hill, and therefore not so well suited to the purpose of the gallop, which requires a gradual elevation to finish with. The trainer, however, will make his selection, and if he cannot get all that he wishes, he will do the best he can. Tan or ploughed gallops are required in frosty or very dry weather, where the ground is made hard either by want of rain or by the severe cold of mid-winter; or a straw ride, consisting of the long litter from the stable after it has been soiled, may be laid down in any convenient situation, upon which the horses may be trotted, or even sweated; but it does not answer the purpose nearly so well as the tan-gallop, which is more springy than the straw, and may be made as deep as it is required, so as almost entirely to take off the jar inseparable from the frozen earth.

SECT. 2.—STABLING.

TRAINING STABLES must of course be obtained, and, if not readily procured built to the hand, they may be put up at a little expense. About 50*l.* per horse will find everything absolutely necessary in the shape of stabling, if materials are not unusually expensive and the tastes of the owner do not lead him into a drawing-room style. This sum will cover all that is *necessary;* but for fancy stables a proportionate sum must be made, amounting, in some cases, to 200*l.* or 300*l.* per horse. Part of the stabling ought to

be divided into loose boxes, quite distinct and separate from each other; but horses in hard work do better in company, and should therefore either be in ordinary stalls—which, however, should be deeper than usual—or else they should only be separated by woodwork below the level of five or six feet, and iron railings above, so as to allow of that companionship which takes off from the tedium of solitary confinement. It is found by experience, that in many instances a horse fond of companionship will take at least a feed of corn more per day in a stall than in a loose box; and hence with light feeders this is a point of great importance, since it often happens that their condition mainly depends upon the amount of corn which they will take. By arranging the stables so as to combine the advantages of both plans, in a way I have suggested—that is, by the iron railing on the top of the divisions—each kind of horse will be suited, and the regular loose box is only wanted where quiet and seclusion are necessary, as in the case of disease, whether infectious or only requiring rest and freedom from annoyance.

Many people are of opinion that stables cannot be too light and airy, but this is, I think, a great mistake; and, on the contrary, I am of opinion that they can scarcely be too dark and confined, consistently with good ventilation. If very lofty, they must be warmed artificially, or else they must be entirely deprived of fresh air; but when moderately small and low—that is, ten or eleven feet high—they are just capable of being warmed by the horses' natural heat, and admit of fresh air being allowed to enter as it is wanted, and carried off by a funnel-shaped air-drain from the ceiling. Darkness, I am quite sure, is advantageous to the horse which is doing strong work, and he will thrive twice as well in a moderately dark stable as in a very light one. The horse in training is at least four hours a day in the open air, and comes in ready for rest, which he does not take to the full extent in a strong light; but with a darkened stable he lies down and rests himself, and suffers his legs to recover from the effects of his work, which they do much sooner in a recumbent position than when sustaining the weight of the body and its full column of blood. For these reasons, therefore, and because I have always found the healthiest stables were dark and moderately low, I should strongly advise their selection for the purpose of training; always taking care that they are thoroughly cleaned out, that the drains are well trapped, and act with a good fall.

There should be every convenience in the saddle-room for heating water, and for washing and drying sweaters, &c.; and the lads should be located in the rooms over the stables, so as to be always within reach of the horses, in case of their being cast, or any other accident occurring. Good water is also very desirable, and the situation of the stable, with regard to the training-ground, is of great importance; it should be within a quarter of a mile of the place where the sweating-gallop ends, in order that the horse may at once be taken in, and dried and finished off before the sweat has time to be reabsorbed into the system. If this cannot be accomplished, a single box must be built at the end of the gallop, where the horses may each in their turn be rubbed down, and then taken out again to have their canter before being shut up in their stable.

Such are the requisites for an ordinary racing-stable; those which relate to the breaking and preparation of two-year-olds I shall leave till after the consideration of the breeding-stud, which alone requires such additional accommodation. I am now supposing that the simplest kind of training is going on, and such as the tyro should alone attempt, if he is at all anxious to avoid a decided failure; for it will be quite time enough, after mastering the *arcana* of the ordinary racing-stable, to attempt to penetrate the still deeper mystery of the breeding-stud, and the bringing out of the two-year-old.

Sect. 3.—Saddlery.

Besides the exercise-saddles and bridles which are left in charge of the lad, and kept in the ordinary saddle-room, there is needed a supply of saddles for trials, which should be of different weights, in order to make up what is intended to be carried in the private trials. These should be under the sole control of the trainer, and kept under lock and key; though, in spite of all attempts at concealment, the lads nowadays are generally able

to arrive at a correct estimate of the powers of the horses which they ride; and many of them have longer heads than their masters give them credit for, though totally incapable of going beyond their peculiar province, and perhaps dull enough in their powers of appreciating anything unconnected with horse-flesh. But still it is useless to give them more than necessary means of arriving at the merits of their charge; and as the trainer may, and does, saddle the horses himself before their trials, they do not even handle the saddles, and he may if he likes keep the weight entirely to himself. These saddles may be kept in a case expressly for the purpose; and if a room is not set apart for them, the case may be placed in a kitchen, or other dry and warm situation. The trainer will of course keep a record of trials; and many men also enter every day the work done by each horse—keeping in fact a regular diary of their performances.

But in addition to these private-trial saddles, numberless articles are required for the training-stable, including combs; brushes; bandages, woollen and calico; sponges; ordinary clothing; light clothing; sweaters and common rugs; exercise-saddles, of 7 lb. weight; plain snaffle bridles, and double bridles; Pelham bits; martingales, and in fact all the varieties of tackle which the trainer may approve of as likely to suit the particular temper of his horses; boots for exercise and for travelling; knee-caps for ditto; water-proof sheets for wet weather; rubbers; leathers; scrapers; twitch; trimming scissors; and the few ordinary remedies used in the stable, such as purging balls, cordial balls, nitre, condition balls, &c., which most trainers use at their own discretion. Local applications for strains or blows of the legs are also kept ready for use, as these accidents are of almost daily occurrence, but their treatment will hereafter be given under the head of Diseases of the Horse. With these exceptions, the above list includes all the articles wanted for ordinary use in training the horse for racing.

SECT. 4.—THE NECESSARY EXAMINATION OF EACH HORSE.

BEFORE COMMENCING TRAINING, it will be necessary to examine each individual horse, and consider the state in which he is as regards forwardness of condition, and also his powers of constitution, his breed, and, as a natural consequence of these points, his capability of standing work. In forming this estimate, the trainer is guided by the following points, which to an experienced eye are pretty certain aids in arriving at a conclusion on the subject:—First, the breed, or strain of blood, upon which much depends, for some breeds are notoriously bad trainers, and others will take any amount of work; secondly, the state of the legs, which must be attended to in all cases, because a horse half fit upon sound legs is better than one perfectly prepared but so sore and lame as to be unable to raise a canter, and utterly incapable of being trained except by means of the Turkish bath; thirdly, the feel to the hand, and the general appearance, which indicate either a hearty, gross, and good feeder, or a delicate, soft-constitutioned horse, always difficult to train. Of course, these three varieties will require very different work: the first being easy enough to get ready, and requiring only regular work, with weekly sweats, and plenty of walking exercise, &c.; the second will constantly demand the trainer's supervision, and must have a very careful lad to ride him, since a single careless gallop will most probably stop his preparation, and occasion his being laid by for some time to come, or perhaps permanently. The third variety may or may not have bad understandings; but in any case he will demand almost as much care as No. 2, for fear of giving him too much work, and thus upsetting his appetite, or destroying his general health. Each of these classes must be worked by itself, as far as sweats and gallops are concerned, but in their walking exercise they do not get any injury by going in the same string. Without these varieties in constitution, temper, legs, breed, and age, training would be a very simple process, because it theoretically consists in simply giving the horse work enough to get his muscles and wind into the highest possible state, and also removing all superfluous fat from the surface as well as the interior of the body. Training is, in fact, working the horse; but the nicety consists in giving the proper amount suited

to each particular case, and in giving it at the right time. It must always be remembered that these directions apply to thorough-bred horses only—the training of half-breds being conducted very differently; and it will be alluded to under the sections on Steeple-chasers and Hunters.

The Following Considerations are those which mainly weigh with the scientific trainer in his decisions and his mode of dealing with each inmate of his stable. The first great essential is a sound constitution, and a robust state of health to begin with. No one can train a horse already lowered by bad food or bad treatment to such a point as to be weak, and probably to a certain extent diseased. Such an animal should be thrown by for a time, and no attempt should be made to train him until he has recovered his flesh, and is in good health, and rather lusty than otherwise. There should be no unsoundness of any kind—that is, none of any importance; and more specially should the lungs and legs be free from disease, for if either of them —the main agents in active exertions —is at all faulty, there is an end to all chance of doing any good by training. It was formerly the custom to train all horses by means of purgatives and sweaters till they were as thin and wiry as it was possible to make them, and no horse was considered fit to run who did not show every superficial muscle in his body; but now a better system prevails, and it is found that as soon as the wind is so good as to enable the horse to exert himself from end to end of his distance, without distress for more than a second or two, that then he is sufficiently relieved of his fat, and only requires time to make him perfectly fit; so that no rule can possibly be laid down, for neither the eye, nor the amount of work, nor any other fixed test will apply in all cases; and experience and judgment must be called in to decide upon the amount of work which each horse must go through.

The Length of Training must vary very considerably according to the previous condition of the horse, his age, and the distance he has to run. Six months may, perhaps, be taken as the average of time which will be required to bring a three-year-old horse out in his best form, supposing him previously to have been broken thoroughly, to have had ordinary exercise, and to be in good health, and sound in his limbs and wind. Many horses have been brought out much more quickly, even reckoning from the time they were at grass; but this is, I believe, the usual average, and in many cases a still longer time has been employed in producing that exceedingly high state of health which is the result of high feeding and strong work, but which can seldom be long maintained.

This time, however, is not all occupied in one undeviating kind of work —walking to-day, galloping to-morrow, sweating the next day, and so on. The plan is generally adopted of dividing the process into two or three stages, called "preparations," and in the intervals giving a dose of physic, and a few days' or even a week's rest. It is well known that a horse which has been out of work for a long time, or which has never done any in his life, requires a long seasoning before his bones, sinews, and ligaments, as well as his heart and lungs, are in a fit state to undergo violent exertion. Hence, supposing the time intended to be occupied in training a horse for a particular occasion is six months, then dividing this space into three preparations, the first will be occupied by very slow and gentle work, the second by work somewhat faster, and the third by the highest rate of speed in the work which the horse is ever to be subject to. In this way, therefore, the training of the horse may be considered under the three heads of his first, second, and third preparation, each one more severe and the work faster than in the preceding one.

Sect. 5.—First Preparation.

The Grand Object in this part of training is to harden the limbs and their joints, to get all superfluous and gross fat out of the interior, and to accustom the horse to long-continued walking exercise. It is seldom that the wind can be entirely made good in this stage, for very fast work could not be borne, either by the internals or externals, and chronic cough or inflamed joints would be sure to follow the attempt to hurry the process. Some hardy horses might perhaps bear the strain with impunity, but in most cases

the injury would be very great, and the training must be stopped in order to rectify the original error. "Most haste is worst speed" here in real truth; and the attempt to begin at the wrong end is almost sure to make the horse slower, instead of the reverse.

MILD PHYSIC will generally be necessary once or twice during the course of this first preparation; but if the horse is out of the hands of those who have attended to his health and given him regular exercise, he may dispense with its use for the first month; after which in most cases it will be required. The amount will vary with the size and age, from three drachms to five, or even more if an aged horse has been on green food, which always makes him less amenable to the action of purgatives. When this dose has thoroughly set he may be walked out regularly, and commence the routine of his daily work. (For purging-balls, see Diseases of the Horse.)

ON OPENING THE DOOR OF THE STABLE at four o'clock in the summer, or at six or seven in early spring or autumn, the lad first racks up his horse, so that he cannot lie down but can reach his manger. He is then fed, usually with a quartern of oats, and perhaps a single handful of chaff if he chews his corn badly; but if he is a gross feeder no chaff at all should be given. During the time of feeding the bed is put straight, all droppings during the night are taken away, and it is otherwise set clean and smooth, and free alike from dung and urine; the straw stained by either the one or the other being all carefully removed. The most particular stable-men turn back the litter every day, and "muck-out" the stall; but every careful man does this at least twice a week. While the horse is finishing his feed the lads may have their breakfasts, for as they will be two or three hours without getting off their horses, they will want something on their stomachs. By the time this is finished the corn is eaten, and the lad now gives his horse his drop of water, and racks him short up, puts on his muzzle, and dresses him lightly over; after which he re-clothes him, saddles him, and puts his boots on, and then either puts on his bridle, after turning him round in his stall, or leaves him for awhile according to his directions, till the other horses are ready. When, however, all are prepared, the horse is mounted in his stall and waits his turn to go out; which he does patiently enough in the stable, from the habit which he has acquired of standing still there, but which would be difficult to persuade him to do on any other spot.

WALKING EXERCISE is the main element in this stage of training, and in fact many horses are fit for little else till they have gone through their first preparation. A single slow sweat, and perhaps even two or three, may be desirable when there is very great grossness; but in the majority of instances it will be better to confine the horse—at all events for the first month—almost entirely to walking exercise. If the horses are young or very fresh, they must be walked for half an hour or so round the yard, or some similar enclosure, for fear of their breaking away with the lads; but if aged, or quite steady naturally by temper, they may at once be ridden off to the training-ground. Here they are walked in a large circle or oval, or other suitable figure according to the ground, for one, two, or three hours; some of them taking a short canter or hand-gallop, if the trainer thinks them fit for that amount of exercise; none of them, however, being allowed to go fast enough to blow or sweat, but merely to vary the monotony of the walk and to keep up the faculty of going, so as to prevent the leg-weariness which incessant walking produces. With this trifling variation, the walk may be kept up for three hours on the average; each horse when emptying himself being allowed to stop, and all behind him stopping at the same time. Mr. Darvill—who is the only writer of any note on the racehorse—is opposed to more walking exercise "than is absolutely necessary," which amount, he thinks, will be measured by that which will, first of all, give the horse time to empty himself, to give flexibility to his muscular system, and to keep firm his legs; secondly, assist in steadying those horses which may be too hearty and full of their gambols; and thirdly, give delicate flighty horses an appetite for their food, as well as assist in steadying them. But in opposition to his opinion is the practice of most of our trainers, who use walking

exercise jointly with the occasional spirt or hand-gallop to an extent which Mr. Darvill never dreamt of. There is no doubt that it may be carried to excess, like every other useful thing, and by over-doing it the joints may be rendered stiff, and the muscles slow to act, and rigid instead of being elastic; but up to a certain point it is the great reliance of the trainer, and especially with horses whose legs are at all inclined to give way, as is too often the case with our present breeds.

THE FIRST SWEAT should never be before the horse has been steadily at slow work for a fortnight; and if not very lusty, or if he is not a good feeder, it may well be postponed for a longer time still. Some horses should never have any clothed sweats, but will part with their superfluous fat without that aid. Indeed, with irritable, fretful-tempered animals, the difficulty sometimes is to keep them from sweating on all occasions; and even if galloped in their ordinary clothes, they lose too much, and are obliged to be worked after being stripped of everything. The mode of sweating is as follows; and as it is done at this time in the morning, it is as well to describe it at this place. It is generally the practice to keep back three horses besides the sweater, in order that their lads may assist; for it is an operation which requires a good deal of help, as will presently be understood. When the sweat is to be a general one, and no part in particular is overloaded, it is usual to put on an old rug first, or a sheet called a sweater, and an extra hood and breast-cloth; then a second quarter-piece; and lastly a complete set of clothing over all, with the saddle as usual. But when particular parts are to be reduced, as, for instance, the shoulders, or the parts about the brisket or bosom, an extra cloth is folded and strapped up to the breast-plate straps on the withers, or retained by the saddle if for the brisket only. All these points of detail will exercise the ingenuity of the trainer, and he will, according to circumstances, place extra clothing on those parts he wishes to reduce, and keep it light on those which he thinks already drawn sufficiently fine. When all are securely fixed, the horse is ridden out, and after walking for a very short time to empty himself, he is started off for his distance, which is generally four miles, and is slowly and steadily kept galloping for three-quarters of it; at the expiration of which he is set going a little faster, and at last is brought out to his top-speed, if in full training, or nearly so if in his second preparation. By his top-speed, however, is not to be understood the very outside pace which can be got out of the horse, but only such a speed as is short of that by so much as will preserve his stride in full vigour and prevent that overpacing which leads to the rupture of muscular or tendonous structure. In his first preparation he should seldom be extended, and it is better to increase the distance rather than to accelerate the speed beyond the steady gallop; but few horses refuse to sweat at this pace in this stage of training.

When he has finished the distance, the trainer examines his state, and either directs him to be walked or trotted on to the rubbing-place, which should be a box set aside for the purpose, either on the training-ground or at the usual stables. The full benefit of the sweat is not obtained unless the fluid is scraped off before it has had time to be re-absorbed, which is effected by the skin, if it is allowed to remain on its surface after it has ceased to give out any fluid. It then, instead of perspiring, adopts the opposite extreme, and appropriates the sweat by its own power of absorption; thus doing away with the chief benefit which was expected and desired from the sweat itself. When the hand of the trainer applied to the shoulder of the horse under his breast-cloth tells him that the sweat is coming kindly, the horse may have a couple of rugs heaped upon him, and be suffered to give out the fluid for a very few minutes only; but if it does not break out at once, three or four must be put on him, and he must wait a quarter of an hour or twenty minutes before he is fit to scrape. If he sweats freely, the lad in charge of his head may rub his ears and wipe his eyes, so as to refresh him slightly; but if there is any difficulty in bringing on the sweat this will only retard the process, and he may be allowed to stand quite quietly and without any attempt to refresh him by the above little attentions, or by rubbing his legs or wiping his thigh or bosom. As soon as the traine

gives the word the hood is taken off, the head and neck are rapidly rubbed dry, together with the bosom, from which the breast-cloth is removed, and the rugs and quarter-piece turned back so as to expose the whole neck and the points of the shoulders. Four lads may be employed in scraping and afterwards drying this part, besides the one holding the bridle; but if the horse is quiet enough, this may be removed, and the head dressed all the more effectually. A very few minutes suffice for drying this part of the horse, when the bridle should be re-adjusted, and the quarter-piece and sweaters wholly turned off over the croup; upon this the four lads again set to work with their scrapers and rubbers, and two taking the sides, and the others the hind-legs, they soon get rid of every particle of sweat, and have the coat perfectly dry and smooth.

Much depends upon the stage of training; in the early part, the sweat is profuse, thick, and soapy, and takes more time to dry, while in the latter stages when the horse is getting fit, it is watery and scanty, the horse will scarcely scrape, and dries without the slightest trouble. This is a good sign of condition, and the necessity for a repetition of the sweat may generally be gathered by the appearance of the fluid, which, when thick and lathery, shows that there is much gross fat in the system, requiring removal; but, nevertheless, it also shows that great care must be taken in the process, lest mischief should be done by calling upon dame Nature too rapidly while the animal is in this fat state, and liable to inflammation of all kinds.

After drying the coat, and smoothing it down with the leather rubber, the usual clothing should be put on, and the horse taken out to his exercise, which he may take with the other horses as usual, care being had that he does not catch cold if the weather is severe. The reason why the horse is taken out again is, that if he were left in the warm stable he would break out again into a sweat, and if he were placed in a cool one he would as surely take cold. Walking exercise, therefore, with a short gallop, is adopted as a means of avoiding both of these injurious conditions; but he should not continue it longer than to cool him down and restore his nerves to their usual state.

The length of ground and the pace necessary for sweating vary with the age, condition, and intended distance to be run over in the race for which the horse is trained, the maximum length being six miles, and the minimum two or three, with a speed varying with every individual case, and depending upon the age, breed, and action of the horse, as well as upon his constitution and legs, and the state of preparation in which he is. Sweats are given at periods varying from once a week to once a fortnight after the first preparation, but seldom so often during that time. When sweats are given without clothing, they are in other respects just the same at that described above, and the lads are required in a similar way to dry the horse at once; but the quantity of sweat is not nearly so great, and two good hands will generally suffice for the purpose. In almost all cases, even where clothing is not used, it is heaped on when the horse is taken into the rubbing-house in order to encourage the perspiration.

On Returning from Exercise the horse is watered, and then well dressed over for at least three-quarters of an hour, or an hour, care being taken that he has plenty of litter under him, as he will generally knock about a good deal while being dressed, and will do his legs and feet no good if he keeps striking the bare bricks of the floor. By the time this is done, the hour of feeding, from ten to eleven o'clock, will have arrived, and the horses may be fed; after which they are shut up, their heads unracked, and they are left entirely undisturbed, and with locked doors, till their next feeding time, which is generally at three or four o'clock. They are now fed again, and allowed a few go-downs of water, and are then saddled and taken out to exercise for an hour or an hour and a half; after which they are brought in and watered for the night; they are then lightly dressed over, and are left till seven o'clock, when they are fed for the last time with their corn, which the light-carcassed ones should have mixed with a little chaff. At this time the hay which is allowed to each is placed in the rack, and then the stables are locked up till the next morning, unless any accident happens requiring the presence of the boys or trainer. The quantity

of hay allowed to the horse in training varies from six to eight pounds per day. It should be of the best upland quality, *well heated*, and at least one year old. Green hay which has never been properly fermented, is very unfit for racehorses. This plan is slightly varied in different stables, some, for instance, giving the water in the stable, and others from the troughs, which used formerly to be the sole mode of watering horses; but the facility of poisoning the troughs has now in a great measure superseded their use, and the water is given in the stable; often being taken from a reservoir under lock and key. These precautions are now become absolutely necessary on account of the constant occurrence of poisoning, which is so very easily effected by means of the water, almost without any reasonable chance of detection—the presence of fish being, however, a pretty good test of its purity. The hours also vary in different stables, but the above are those most commonly followed; and they suit the habits of the horse and the powers of his stomach, which requires to be often filled with small quantities of food, and not gorged as in the dog and cat tribe.

The Amount of sweating and galloping during the first preparation may be very gradually increased, if the trainer finds that his early attempts are followed by improvement; that is, if the horse seems light and corky after a sweat or gallop, and if he feeds well and his legs are cool. Sometimes the reverse of these results takes place, and the horse is quite upset, and requires a bran mash or a gentle dose of physic to put him in place again; after which he must be allowed a considerable time before the attempt is next made to improve his condition. All these various points require the greatest care, and it is here that the experience of the trainer is tested. Nothing is more easy than to bring out a perfectly sound hardy horse; but to produce a naturally washy and light carcassed horse in high feather is a task which requires not only experience but considerable thought and judgment, since there are very few even of these which are exactly alike; and fresh complications are constantly occurring, the results from which must be set to rights at once, for if suffered to gain a head, they will demand such severe measures as will put the horse back very considerably in his preparation.

A Second or Third Dose of physic, of a mild nature, will almost always be necessary at the end of this first preparation; and the horse should be well mashed before giving it, and then suffered to rest upon walking exercise and a lighter allowance of corn, with a mash or two, until the expiration of a week, including the days of his physic; after which his next stage begins.

Turkish Bath.—When the legs, either in their joints or sinews, are so infirm that they cannot stand sweating in the ordinary way, the Turkish bath has been resorted to as a means of getting rid of superfluous fat, internal as well as external. Of course it does not do more than this, and a proper tone of muscle must be obtained by such an amount of slow work, especially walking exercise, as the horse will bear. To give the Turkish bath, a chamber large enough to hold the bath must be fitted up, unless, as at Newmarket, one open to the public can be obtained. The repetition of this means of reduction must be according to the effect already produced, and no rule can here be laid down.

Sect. 6.—Second Preparation.

By the end of the last described stage the horse is getting hard in the muscle, his sinews and joints are becoming set and firm, and he may now be galloped a moderate distance and at a fair pace with safety. His corn also may be increased one quartern, being raised from a peck a day to five quarterns, which quantity may be continued throughout this period, varied of course according to circumstances. The stable-hours are precisely the same, and the length of exercise is not altered, but the chief difference is in the pace of the gallops and the frequency and length of sweats. These are now generally given every week or ten days, and the distance is almost always four miles, except with very young colts, which we are not now considering. In the sweat itself the pace is made pretty good, especially towards the end; and if the horse is at all inclined to be lusty, he is made

to extend himself for the last mile, and is kicked along and roused to his outside pace towards the finish, so as to make him blow very considerably, and to open his pipes to a great extent. The sweat in the first preparation is only adopted as a means of getting rid of the superfluous fat from the interior of the body, but it is now used partly for that purpose, but also in order to improve the wind. The lad riding the sweat should be a good judge of pace, and the one usually employed is seldom sufficiently so to be trusted; an older head will almost always be necessary, and the one in the stable who is the best judge of pace should be selected. In riding gallops the head lad usually leads, and thus regulates the pace for those behind him; but in a sweat this cannot be, because the sweating horse goes at so very different a rate of speed with all his sweaters on to that of a stripped horse, that it is very difficult to lead him and avoid forcing him too much. No one but the rider of the sweating horse can exactly tell how to ride him, and unless it is left to his discretion mischief is sure to accrue. Unless, therefore, there is sufficient strength in the stable to allow of three or four horses being sweated together, it is better to let the head lad sweat them all; but if there is, he may easily regulate the pace for those sweating at the same time. The scraping and subsequent exercise are just the same as described at page 437, except that afterwards a gentle gallop may be given with advantage.

Galloping Exercise in the second preparation, independently of the sweats, may be now had recourse to, great care being taken that neither the legs nor the constitution suffer by too rapid an increase of the length of gallop, and the pace at which it is done. During the first preparation, and towards its close, the horse has been accustomed to short gallops, and the trainer has been able to judge from them, and from the slow sweats, how far he can venture upon faster gallops, and longer and more severe sweats. Throughout the whole of the three preparations each succeeding stage must be regulated by the preceding one, and the superstructure must be built according to the effects of the early stages upon the foundation. If, for instance, the last week's work is badly borne, the next must be rather less than more severe; whilst, if the horse "trains on," and improves in all respects, the lengths and pace may be gradually augmented, and all goes on smoothly, and to the trainer's satisfaction. Thus it may be understood that no rule can be laid down further than this, that so long as the horse is lively, looks bright and merry, and *feeds well*, he may safely be considered to be above his work; and it may cautiously be increased up to the highest standard of which he is capable according to the opinion of the training-groom. The difference between the sweat and the gallop may here be considered; the former being a process of reduction, to get rid of offending and useless matter, the latter a process of education, to build up useful muscular structure, and to teach the horse how best to use and economize his powers. This difference should be steadily kept in view, and the trainer should remember that he not only has to get rid of fat, but he has also to lay on good wiry and yet elastic material, and to accustom the horse to exert his powers in the most quick and telling manner. Such is the theory of these two processes; the practice by which it is carried out we shall return to hereafter. With regard to sweats, as soon as the fluid becomes quite watery, and all superfluous fat on the surface appears removed, they need not be used with heavy clothing; but the horse may either be sweated in a light rug or stripped, as the trainer may consider best from his appearance and from his breed, which is a great guide to a man who knows practically the peculiarities of the various strains.

The Management of the Gallops is dependent, in a great measure, upon the number of horses in the hands of the trainer, and upon their peculiar natures and dispositions. Some lead best, others will not lead kindly, and when placed in front are always hanging about, and preparing to bolt out of the course or gallop. These animals should always be kept second or third in a string, and must have a horse to lead them in all cases, in order to extend them and bring out their powers, which often are in the end of a first-rate character. Hence the necessity for a horse especially set apart for

the purpose of leading the gallops, because the chances are that there is not one in the string whose temper is such as to enable the trainer to place him first with advantage to himself, and yet sufficiently fast to draw out the powers of those behind him. If, however, there is such a horse, no other is wanted, and the expense may be spared of procuring one. But it is very seldom that a horse even of a suitable temper leads a string long without losing pace; still there are exceptions, and in some instances he will not train anywhere else, and if placed behind another he will fight in his gallop, and take so much out of himself as to interfere seriously with his progress. Such a horse, however, will seldom show to advantage in a race, because he will not be used then exactly as in his gallop; and his competitor's rider finding out his peculiarities will worry and excite him, and make him display those qualities in the race which the trainer, by putting him to lead, has kept in abeyance during his training. So that after all the evil day is only postponed to a time when its advent is attended with the expense and mortification inseparable from a public defeat. These animals are very useful to the trainer, but they are often unworthy of the support of their owner, leading, as they almost always do, to his belief in their superior powers from their private performance, which is only upset by their public failure.

THE CONCLUSION of the second preparation should be a severe sweat, then a bran-mash for two following nights; after which, if the dung is soft enough, a dose of physic should be given, and the week made out by slight reduction of corn, with walking exercise only. This brings us to the last stage of training.

SECT. 7.—THE FINAL PREPARATION.

SETTING.—Except with very gross horses, and such as will persist in eating their litter, the muzzle is not employed until the time we are now considering; but in such animals it may be necessary in the second stage of training, yet the instances are not common in which it is needed. By setting is understood the preventing the horse from getting at hay or litter from the time the muzzle is put on; for it is found by experience, that fast work upon a stomach containing anything but corn will interfere with the wind, and occasion mischief, rather than improve that essential qualification. Hence, in different horses, according to their constitutions, they are set at particular hours—some requiring to be set over-night after having their hay, others being so light-carcased as to be better only set at a very early hour in the morning, and some very gross feeders requiring the muzzle on immediately after their last feed of corn over-night, and without giving them any hay as usual, or perhaps only half their allowance. In all cases the setting does not interfere with the corn, which is given as usual.

SWEATING during the last preparation is carried on at such intervals, and with as much clothing, as the experience of the second preparation leads the trainer to consider desirable. All these points must vary with each case, and it is ridiculous to attempt giving rules on the subject. I have already, in page 439, described the increase in the severity of the sweats during the second preparation; and I can only add that according to the results of these will the trainer decide upon what is now to be done. During the last preparation the amount of walking exercise may be reduced in exact proportion to the degree in which the gallops and sweats are prolonged. It is no doubt true that the long continuance of the slow pace of walking is to a certain extent opposed to a very fast degree of speed, and the horse which was only walked a very short distance would in all probability always command the highest amount of pace of which he is capable *for a short spirt.* But as he is generally wanted to do more than this, and as his legs will seldom admit of his doing all his work at a fast rate, a compromise is effected, and his training consists of a due admixture of walking and galloping, varied in length of each according to the peculiar circumstances of the case. Sweating, however, as already remarked, is for a different purpose, being designed to reduce the fat of the horse, or to keep it down already reduced by previous sweats, and to prevent any unnecessary amount of galloping work beyond that which is

required for wind and muscle. By these means the legs are not made more stale than necessary, and yet the horse is kept light and corky, and his heart and internal organs are allowed free play. There is no doubt, however, that if the legs would admit of it, and if the individual is not more than commonly gross, sweats might be dispensed with, and the gallops made to suffice ; but as in practice it is found that the amount of fast work necessary for this purpose will almost always make the legs stale, the expedient is resorted to of using a slower pace, by the aid of extra clothing, to do that which the faster pace and more frequent gallops would otherwise effect. It may therefore be considered as a rule, that in all cases during the final preparation a long-continued and moderately fast gallop, called a sweat, with or without clothing, will be required every week or ten days to keep down superfluous fat and flesh, and to do this without affecting the legs.

THE GALLOPS which a horse goes through in his last preparation are chiefly with a view to accustom him to extend himself at his best pace, and in a steady, workmanlike way, without raking or fighting, and with the view of gaining the power of staying the distance which he has to get. The process to effect this will depend in great measure upon the distance which is "to be got into the horse" (or which he has to run, in plain English), and also upon his temper, age, and breed. Some horses will bear training badly, and can never be safely galloped the distance which they have to run at the speed which they are likely to be put to when actually engaged in the race. They must be nursed, in fact, and the best must be done with them of which they are capable ; and such horses are very difficult to bring out, and will not do to race a second time for perhaps two or three months, in consequence of the effect produced by the effort to which, of necessity, they are unused. This difficulty may either arise from a high state of nervous irritability, or from delicacy of constitution, or from both. In many cases, a horse which is hard pushed, and either made or allowed to exert himself to the utmost, is so excited that he refuses his feed for some days, picking up only a few oats or a handful of hay, and losing his condition more in a few days than can be replaced in two or three months. It is obvious, that if this degree of excitement is often brought about in private during the course of his training, the chance of success would be entirely destroyed, and therefore the plan is adopted of always keeping the horse within himself in his gallop, and never by any chance allowing him to extend himself to such a degree as to produce this unfortunate result. All this, however, can only be found out by experience, and it is not until the mischief is done that it is possible to discover that any horse will be thus affected. It is a great drawback in all cases, and it is only in very superior horses in other respects that it is worth while to persevere with such temperaments. This condition of the race-horse has nothing to do with, though it is often attended by, the peculiarity evinced by some animals of displaying their powers only in private. Many a first-rate horse, as tried in private, will never face a crowd, though he will take any amount of work as long as there is no noise and bustle, and will do all that is required ; but once let him hear the shouting of a crowd, or see the people beforehand even, and his energies seem to leave him, to the extent often that he ceases to struggle, and "shuts up," as it is called, at the distance, or perhaps nearer home, apparently with the race in hand. There is no remedy for this nervousness but repeated trials in public, because of course the crowd cannot be got together or imitated in private ; and thus the only way is to persevere until the horse becomes accustomed to the stimulus, which, however, he often fails to do. It is partly a constitutional defect, but it may also arise from the want of early accustoming the young colt to crowds, and the noise connected with them. Very valuable young horses, when broken, are often nursed up and kept in retired situations for fear of accidents, and the result is, that they are easily alarmed when first taken into company, and so affected by it as to be utterly useless for the very purpose for which they have been so carefully preserved. Care has here defeated its own object, and it is only another exemplification of the principle, that a good thing may always be overdone. The expedient is sometimes adopted

with success of deceiving the horse by running him in clothing, but this is chiefly useful when great punishment has on a previous occasion been used in a race, which has made the horse nervous, and perhaps vicious, afterwards. The clothing then, is associated with the absence of the spur, and the race is run without the reminiscence of the severity which was formerly used; but for the purpose of doing away with the effects of the crowd such an expedient is of little value.

The Length of Gallop is generally in proportion to the intended race, and their outside distance is not constantly gone over, but only once, twice, or thrice a week, according to the temper and stoutness of the horse. These longer gallops are generally a trifle further than the distance of the intended race, unless that is a very long one, and the horse is not very stout—as, for instance, for Queen's-plate distances, when the sweats may be relied upon for the purpose, and the horse may be kept to two-mile gallops at the outside. If, however, he is stout enough, it is always better to send him the full distance, and a little over, at least once or twice a week. Shorter spins of three-quarters of a mile, or a mile and a quarter, will be adopted as often as the trainer sees fit, and one or two will be given, at a pace varying with circumstances, every day, except the day after sweating, when little more than walking exercise should be used.

In finishing the gallop, the hindmost horses are allowed to reach, and even to go by, the one leading them all; but this is only occasionally, and not in every instance. The trainer beforehand gives his orders to the lad leading, who is generally put there because he is a judge of pace, and to be depended upon; he also instructs the others either to keep their places, or to get to the leading horse's girth at a particular part, or even to go by him if they can at the finish—all according to the wishes of the trainer; and the going by at the finish being either by sufferance of the leading lad, or otherwise, as the case may be. The necessity for all this, however, will be evident and clear to the least experienced, and need not be more fully enlarged upon.

Over-marking is the effect produced upon the horse constitutionally, as well as locally upon the legs, by over-work and over-feeding. In this respect the horse may be compared to the bow of the archer which may be tightened with advantage up to a certain point, but beyond that it ceases to shoot at the best rate, and will in fact break if the tightening is carried far enough, or will permanently suffer in elasticity and power, without actually snapping. So it is with the horse; up to a certain point, varying in every case, he may be galloped, and sweated, and fed, but in every case there is a turning point which must be carefully watched, and avoided by diminishing or by not increasing the food and work, so as to steer clear of the dreadful result. The over-marked horse is detected by his dull heavy eye, his staring coat, his battered legs, and his general look of care.

At the same time the fact must not be lost sight of that a *stout horse* ought not to make his appearance full of life at the post, but should, though looking blooming and full of muscle, be quiet and rather dull than otherwise. Such is the appearance of the well-trained horse of stout blood; but, on the other hand, the same degree of work which would produce this state of quiescence would be fatal to the chance of another horse of less stout heart and constitution, and therefore it is common enough to see even in the same stable two horses make their appearance, one dull and sleepy-looking, and the other full of irritability and life; and yet both have had full justice done them, and been trained with equal care, though with a very different amount of work.

Hand-Rubbing to the legs must be practised throughout the whole course of training, but it is now more than ever necessary, and each leg should have at least a quarter of an hour's rubbing every day. It is astonishing what a difference this process makes in the durability of the legs, as it is found by experience that they will go through much more battering while they are carefully hand-rubbed than they would do without it, or with it only imperfectly done. The more precise mode of rubbing will be given under Stable Management, which see for for many other directions necessary for the management of every kind of

horse; those only peculiar to the race-horse being here given, in order to avoid endless repetitions.

Sect. 8.—The Trial.

A Trial will in most cases be required before the actual race, and it is generally attempted at about a fortnight beforehand, or still longer in the case of important races, like the Derby or St. Leger. It is usual to try horses about two days before their customary sweat, so as not to interfere with their due course; but if the horse is not very lusty, and the trial is to be run very true, the sweat may often be dispensed with, and the trial take its place. No private trial can be depended upon unless two or more horses are in it in addition to the horse to be tried; and they should all be ridden by men as good as those who will ultimately be ordered to ride; for to put a first-rater on the horse to be tried, with an exercise lad on the trial horse—as is often done—is a mockery and a snare, and only leads to disappointment. Far better than this is the plan of putting up the usual boys on all; but sometimes regular jockeys can be obtained, and then, if all the horses are really equally fit, some dependence can be placed on the result. After all, the private trial cannot give implicit confidence, for the reason that I have given in page 441, especially in horses which have never seen a race-course, and such are those which are generally tried in this way, because those which have already been out are by that means tried, and the less they are hustled the better. Nothing differs more from a true-run race than the ordinary careful gallop used in training, where the horses go a good steady pace for a certain distance, and then make a single effort, and finish without a prolonged struggle; but in a race it often happens that first one horse goes to the head of a dreaded performer, and extends him, then another tries his powers, and perhaps even a third, all which is never done in a private trial. Scarcely any two races are run exactly alike from these varying circumstances; and thus it cannot excite wonder that the trainer or the owner is deceived, and led to expect a very different result from what really takes place; though if the race had been run exactly like the trial, the horse might have performed as well as he then did. In all cases of private trials, such a weight is put upon the trial horse as to make him (on the principle of the handicap) the equal of the horses which are to be met in public. The trial horse, therefore, is of no use unless his powers are well known to the trainer; and he should have been recently out, so as to have proved his present "form" by his actual performance, without which criterion he may as well be kept in his stable. If, however, all these points have been attended to, and the beating has been very satisfactory and complete, it is reasonable to expect that the same can be repeated, subject to all the vicissitudes already alluded to.

Sect. 9.—The Last Week's Work.

A Sweat, either with or without clothes, usually commences the last week before running; and the extent to which it is carried will always depend upon the lustiness and general character of the horse. If the trainer is of opinion that his pupil must be drawn fine, he will now put the finishing touch to his previous work by giving him a severe sweat; but if, on the other hand, he thinks that the opposite condition will suit him best, he adopts the plan of giving a very gentle sweat, and perhaps without any clothes. In all cases, however, the long steady gallop afforded by the "sweat" is useful about this time, and should seldom be given later than the seventh day before running; though in extremely gross horses, or where the individual seems always improved by the sweat at a short interval, it may be practised as near even as the fourth day before the public performance. After the sweat the gallops are given as usual, and carried on daily until the day before the race, when a slight or severe one is given, according to the nature, age, and temper of the horse. Usually, however, a good brushing gallop is given two days before the race, and on the day before only a moderately short and fast gallop, so as to open his pipes, but no more. All these points, however, cannot possibly be entered into, further than to give the most common requirements, and the principles upon which they should be varied.

Sect. 10.—Feeding.

The Feeding during the whole of the third preparation is on the most liberal scale, being increased from four quarterns of oats per day in the first, and five in the second preparation, to six quarterns in the third, with the addition sometimes of half a quartern of split beans divided among the four feeds. Peas used formerly to be much in vogue for training purposes, but they are now seldom used, it being found that they disagree with the horse more than beans; and that they are apt to affect the kidneys, whilst beans are entirely free from that objection, and are solely prejudicial to the condition, inasmuch as they are heating, and apt to produce feverishness and a tendency to inflammation of the legs. Hence, most horses are better restricted to oats and hay; and with good English oats of full weight, and sound upland hay, the condition may generally be obtained as soon as, and retained much longer than, with the aid of any other kind of food. Some horses, however, are very shy feeders, and will scarcely eat oats enough without beans; and in such cases the last-mentioned article must be had recourse to, using them, however, more as a means of tempting the horse to eat his oats than as a main and solid stay in themselves. In the third preparation chaff should always be avoided, if possible.

Sect. 11.—Review of Training.

From the Previous Remarks it will be gathered that the training and bringing out of the horse is a much more simple process than the corresponding treatment of the greyhound. At the same time there is room for much more skill, because there is less uncertainty, and the really good trainer has more chance of a return for his care than is the case with the canine pupil. In the horse, the trainer must certainly always take into consideration that some few of his charge, though capable of running to advantage, yet will not try their utmost; but with the greyhound-trainer this is a constant source of uneasiness, and his operations are continually cramped by a fear of its occurrence with every dog. With a horse of good blood and temper, the trainer may generally calculate with certainty upon his doing to-morrow pretty nearly what he has done to-day, and hence he has some guide in his operations; but not so with the greyhound, who is ten times more uncertain, and will throw overboard all his trainer's calculations, by refusing to try even when at his very best in point of condition and general powers. The great thing to be avoided by the trainer of the horse is the tendency to be constantly extending him, for it is found that few horses will bear it without loss of pace; and when kept racing at one another they will lose heart, unless they are as stout as steel. Hence, the good trainer, when he is aware of the peculiarities of his horse, keeps him within himself, and will give him pace by occasional short and merry spirts, without taking enough out of him to produce loss of speed, or to destroy his relish for the race, which most generous horses delight in. He will study the peculiar temper of his string, and will in the course of training discover not only how they like best to be treated in their work, but what sort of race suits each individual, whether they can run from end to end, or can only last through one short struggle; and upon the views thus formed he will instruct the rider on the day of appearing in public.

The above may be considered to include all that is necessary for ordinary training, when commencing with a horse purchased out of some stud where he has been condemned. It is not to be expected that many people will succeed like Mr. Parr, with a Weathergage or a Mortimer; but if these views are carried out, they may enable any amateur to understand the principles upon which his trainer is proceeding, and perhaps to distinguish between the rude attempts of an ignoramus and the successful efforts of an artist.

CHAPTER VII.

BREEDING.

Sect. 1.—The Stud Farm.

The Necessity for a Farm, with all the buildings suitable to a breeding stud of racehorses, is self-evident, inasmuch as the mares and colts are of so valuable a nature, and also of such intractable dispositions, that ordinary accommodation would be insufficient. But even more do they require herbage of a peculiar kind, full of fine clover, yet free from the coarse grasses, and the land well drained, and of a sandy or chalky subsoil. The presence of these characters has made Yorkshire so prominent as a breeding locality, and its thorough-breds as well as its horses of inferior blood have always stood high in the scale. On the other hand, low, marshy situations are unfavourable to the development of the horse, and cause him to be coarse, unwieldy, and generally unsound. In selecting a breeding farm, therefore, the first, and the most absolutely essential, point is the soil, and by consequence the herbage. The surface should be undulating, but not very hilly, giving such sufficient alteration to teach the young stock the difference between uphill and down, and enabling them to acquire the power of mastering themselves over both variations of surface. The size of the enclosures may easily be altered if too large or too small; but it would be well, and save much consequent trouble and expense, if a farm could be found divided into small enclosures by banks and strong thorn hedges, and without deep ditches, which are always a source of danger to both colt and dam. Walls are very good divisions, if they are high enough, and the earth is raised against their foundations; but they are not equal to good banks with thorn hedges upon them.

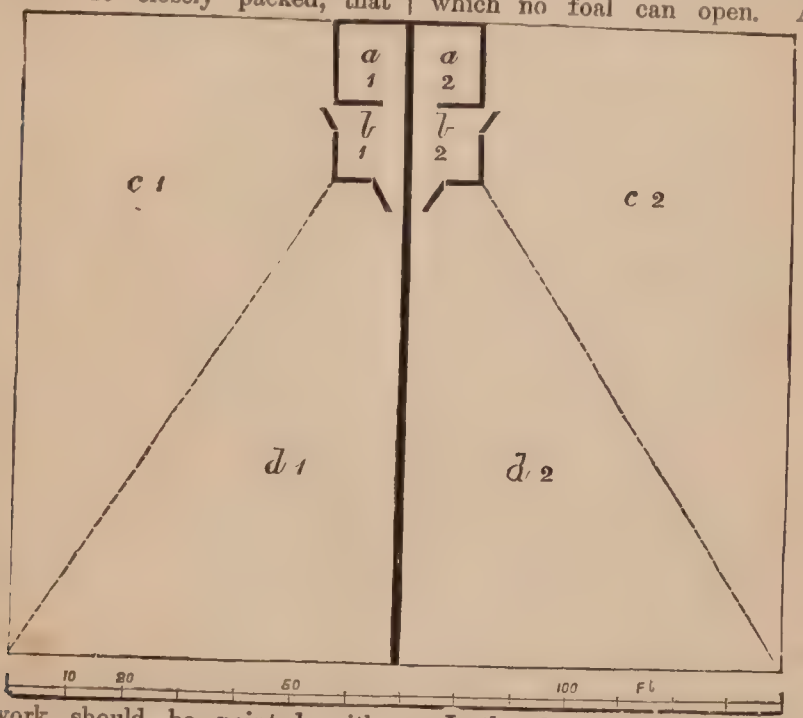
A Certain Number of Hovels proportioned to the mares must be put up, if they are not already in existence, and they may most economically be built by placing four together where four paddocks meet, or, if those are very large, by building in the middle of one, and dividing off the field into four separate runs for the mares and foals. But though this plan is very commonly adopted from economical motives, it is not a good one, because the aspect of two of the hovels must be northerly or easterly, both of which are cold and prejudicial to young stock, besides being too shady during the early spring. It should, moreover, be remembered, that in the spring time when mares require the most grass they exhaust it the soonest, and that it will not be advisable to allot them too small a run, but rather to give each hovel a double one, in order that as soon as the mare has cropped one half close she may have a change into the other. The plan of a pair of hovels, with yards and paddocks, on page 447, will afford a good idea of the very highest accommodation which can be desired. They may be built of brick, stone, timber, or gorse, according to the taste and purse of the proprietor; and they will cost from 50*l.* to 10*l.* per hovel, when plain; and when ornamented, in proportion to the decorations. In all cases the size should be about fifteen feet by twelve feet for both hovels and yards, and the aspect should be invariably to the south either facing that quarter or a point or two to the east or west of it. The door should never open in any other direction, because it often happens in early spring that the weather is too cold and wet to turn the mare and foal out, and yet the sun may be admitted by opening the upper half of the door, with great advantage to the young animal, which requires sun as much as its mother's milk. When materials are very expensive, and money is limited, a hovel of twelve feet square may perhaps suffice; but the extra length will be well bestowed, and it should always be calculated on as desirable, if not absolutely needful. With regard to height, I should say that eight feet is a good and sufficient amount of head room, for as these boxes are never air-tight it is not important that they should be very lofty, and if made too high they become very cold in the long winter nights, whereas if kept down to eight feet, the warmth of the mare's body raises the temperature sufficiently to protect the foal from an

excessive reduction during a frost. In all cases the roof should be thatched, which material is cool in summer and warm in winter; and as these hovels are always at a distance from the main dwelling, it is not here objectionable on account of its tendency to burn. Next to thatch, tiles afford the most equal temperature; but they are not in this respect to be compared to it, though far superior to slates. The walls may be of brick or stone, which are the best and most desirable materials, and equally good in every respect, the choice being given to that which is the cheapest in the locality. Boarding is a bad material, as it can scarcely be made warm and air-tight, and is liable to give cold by allowing small currents or draughts of air to play upon both mare and foal, which is worse than leaving them exposed to the open air. Of cheap materials, the best is gorse, when it is to be had, which makes an excellent and warm fence from the cold and wet, and is only objectionable from the room it takes and its liability to decay. It will, however, last for ten or a dozen years, and where the stud farm is only an experiment it may, and probably will, last as long as the owner preserves his taste for this particular hobby. In every case the doors should be wide and high, viz., seven feet six by four feet six, and all angles rounded off; to which precaution a roller on a door-post is a very useful addition, as a prevention from accidents. The yards should be walled in, or divided off by a wooden partition, or a gorse fence, either of which should be seven feet high. The door to the hovel should be of elm or oak, and made in two portions, so as to allow the lower half to be shut without the upper one, in order that air may be admitted at times when the weather will not allow of the mare and foal leaving the hovel; a small window should be inserted in the wall, and the mangers made in the following manner:—In one corner a manger of good height should be placed for the mare, with a ring above, to which she may be tied; and in the other a lower one for the foal, by which arrangement the mare is unable, when tied up, to deprive her foal of his corn. The hay-rack is better made on the outside of the wall, so that the groom may be able to replenish it without entering the hovel; and this is easily effected by placing it as an excrescence on the outside with a lid to turn the wet off, and with bars on the inside. This plan prevents all chance of accident from the gambols of the foal, which often lead it into mischief, if the arrangements are such as to give it any possible opportunity. In the third corner, unoccupied by the door, should be a water-tank, which may be of iron, and should always be replenished with fresh soft water from a river, pond, or rain-water tank. The floor should be paved with flints, stones, or hard bricks, and a well-trapped drain placed in the centre. The yard also should be paved in the same way, though this is not so essential; and it is sometimes kept replenished with burnt clay, which thus serves the double purpose of absorbing all the urine, &c., and keeping it free from putrefaction, which the clay has the power of doing. It is changed as often as it is saturated, and is then removed to a situation remote from the mares and foals. The partition between the two yards should be partially open, so as to allow the foals to become acquainted with each other before they are turned out together, which they generally are at weaning time; for if then strange to one another, they pine for their dams much more than they do when they have had a previous introduction.

When gorse is used for the building it is applied as follows:—The door-posts and uprights are first fixed, and should be either of oak—which is best—or of good sound Memel fir; they should be about six inches by four, and should be fixed six feet apart, with three feet sunk in the ground. After thus fixing the framework, and putting on the wall-plate and rafters, the whole internal surface is made good by nailing split poles of larch, or other timber, closely together across the uprights, taking especial care to round off the ends when they appear at the door-posts. Thus the whole of the interior is tolerably smooth, and no accident can happen from the foal getting his leg into any crevice between the poles, if care is taken to nail them securely, and to leave no space between them. When this internal framework is finished, the gorse is applied outside, as follows:—It is first cut into small branches, leaving a foot-stalk to each, about twelve

or fifteen inches in length: these branches are arranged in layers between the uprights, the stalks pointing upwards and inwards, and the prickly ends downwards and outwards. When, by a succession of layers of these brushy stalks a height of eighteen inches has been raised, a stout and tough pole, about the size of an ordinary broom-stick, and six feet long, is laid upon the middle of the gorse, and so as to confine it against the split poles and between the uprights. The workmen kneel upon this pole, and by its means compress the gorse into the smallest possible compass, and while thus pressed down, and against the internal framework, it is confined to the latter by five or six loops of strong copper-wire. When this is properly done, the gorse is so firmly confined, and withal so closely packed, that neither wind nor rain can penetrate, nor can all the mischief-loving powers of the foal withdraw a single stalk. After fixing the first layer, a second is built up in the same way, and when neatly done, the exterior is as level as a brick-wall; but if there are any very prominent branches they may be sheared off with the common shears, or taken off with the ordinary hedging bill-hook. When it is desired to make the exterior look very smooth, a hay-trusser's knife is used; but the natural ends, though not so level, are a much better defence, and last longer than the cut gorse. In the interior the stalks sometimes project, and if so they must be smoothly trimmed off.

The door-fastenings should be free from projections, and nothing answers better than the common slide-bolt, which no foal can open. All the



wood-work should be painted with coarse paint, or dressed with tar, which is the best for the purpose, as it effectually prevents the young stock from licking and biting the projections, a trick which often ends in confirmed crib-biting or wind-sucking. The yards should have two gates, one opening into each separate paddock, so that the one may be shut up, and the other left for them to use when turned out, and thus the grass allowed to make head and a change permitted in the pasture.

In the plan, *a* 1 and *a* 2 are the two hovels, *b* 1 and *b* 2 the two yards, *c* 1 and *c* 2 the two upper paddocks, and *d* 1 and *d* 2 those which are used as a change. By closing either of the two gates to the yard, the other will admit the mare and foal to the paddock into which it opens. In all open-timber partitions plenty of gorse or thorns should be inserted to make them good, in order to prevent the foal from slipping in his gallops, and getting hurt, or even cast under the bars.

This accident has ruined many a foal, and the only certain prevention is to make up all timber fences by the above materials, one or other of which may always be readily procured.

A CERTAIN PORTION OF ARABLE should always be held with the grass land, in order to produce lucern, rye, carrots, &c., for early spring feed. It must be recollected that the thorough-bred mare is required to foal as early as possible in the year, because the produce takes age from the 1st of January, and with two-year-olds a month or two is of great importance. In few situations is there much grass fit for the mare before the 1st of May, and therefore cut stuff of some kind, with carrots or swedes, must be given. These can only be produced economically on the stud-farm itself, and provision should always be made for an early supply. Italian rye-grass is generally the earliest crop, and if the soil suits it should always be planted. Swedes do pretty well, but not so well as the Italian rye. Carrots also are useful; but in all cases both the carrots and swedes should be cut very small, for fear of choking the foal, or even the mare—an accident which has happened to both on many occasions. Lucern comes in soon after the rye-grass, and is an admirable food for suckling mares. Vetches are both too late and too heating, and are not nearly so good as lucern.

SECT. 2.—MANAGEMENT OF THE MARE.

In this place, in the usual order of things, it might be expected that I should allude to the selection of the brood-mare, and the best cross for her; but, for the sake of simplicity, it will be better to describe the general management of the breeding-stud, and the breaking and training of young stock; and finally to consider the most desirable strains for breeding racehorses *after* all the various elements of success on the turf have been thoroughly investigated, as well as the steeple-chase, hurdle-race, &c. This is, to some extent, putting the cart before the horse; but as it will make this mysterious subject more intelligible, I prefer adopting the plan, to the apparently more simple one which I have rejected.

THE DURATION OF PREGNANCY in the mare is eleven months, and, consequently, she should never be put to the horse earlier than the end of the first week in February; indeed, there is great hazard in sending her before the middle or end of the month, as so many mares drop their foals a fortnight earlier than the full time. Should this occur with a mare stinted on the 8th or 9th of February, the foal is dropped in the last week of December, by which its age is increased one year, and it is ruined for all weight-for-age races, and in fact for all purposes. The mare should be allowed to be at large in the fields during the day-time, as exercise is of the greatest consequence to her health; and she should be carefully kept from the sight of any object which can terrify or distress her, such as pig-killing, or the sight or smell of blood in any way. Sometimes an epidemic causes a series of miscarriages, or premature slippings of the foals, and almost every mare on the farm is affected in the same way; and there seems to be no mode of preventing this untoward result.

When the mare is near her time, she shows it by the filling of the udder, and by the falling in of the muscles on each side of the croup, which the farriers call the "sinking of the bones." When these signs appear the mare should be constantly watched, in order that assistance may be given her if there is any difficulty in the presentation. The usual mode for the foal to come into the world is with both forelegs first, and if after they appear the nose shortly shows itself, all may be considered straightforward, and no fears need be entertained. Sometimes with a large foal and a comparatively small pelvis, a little assistance may carefully be given, by gently drawing upon the legs after the head is well down; but these cases are unusual, and with this natural presentation it is seldom required. If, however, there is any other kind of birth, and the head presents without the legs, or the hind-legs first, or if the head is doubled back upon the body, assistance must generally be obtained, unless the man in attendance is more than ordinarily skilful. Turning is generally the expedient which is had recourse to by the regular practitioner, but it requires great care and skill to accomplish the operation without danger to the foal. As soon as this is born the mare should be allowed to clean it,

and the secundines are removed by the attendant; after which the mare should have a little warm gruel, and, if very much exhausted, about a pint of strong ale (more or less according to circumstances) may be given with it.

It often happens with the first foal that the mare will not take to it, and not only refuses to clean it, but actually denies it the proper nourishment from her teats. When this is the case the man should milk the mare and soothe her, and after her udder is somewhat empty, and she is relieved, she will generally allow the foal to suck. They should never be left alone till this has taken place, as it is dangerous to do so for fear of the mare doing a fatal injury to her offspring. Before the coat of the foal is dry, the mane should be combed all on one side; by which precaution that ragged unsightly look is avoided which it has if part hangs on one side and part on the other.

For the first twenty-four hours, nothing besides warm gruel and a very little hay should be given to the mare; but when the secretion of milk is fully established she requires corn, bran-mashes, with malt, carrots, swedes, lucern or green food in some shape, according to the season of the year.

THE BEST TIME FOR THE ADMITTANCE of the horse is the tenth day after foaling; leaving nine clear days between the two acts. I am assured by a breeder of great experience, that this is better than the ordinary mode of putting her to the horse on the ninth day. It often happens, however, that this would be too early, as where the foaling has taken place early in January, when if the mare were put to the horse, she could next time foal in December—a consummation to be carefully avoided. For this reason the visit is postponed; and this is one cause of the constant occurrence of barrenness in the thoroughbred mare, of which about one-third every year are sterile and profitless to their owners. Another cause is the over-use of corn, which keeps them in an unnatural state of excitement, and prevents that coolness of the system which is required for the highest state of perfection in the generative organs. It often happens that a mare will not stand to the horse while at hard work, not because she is injured by her duties, but because she is over-corned; and this condition can only be overcome by a long run at grass, which cools the blood, and allows of all the functions being performed without inflammation, which is the great *antidote* to successful impregnation. It is usual after putting the mare to the horse to take her to him every nine days, until she refuses him, when she is considered "stinted"; but many mares will go on taking him long after they are successfully impregnated; and this, therefore, though a good rule, is not by any means an invariable one. If the mare is at all confined in her bowels (which is seldom the case, on account of her diet), she should have a dose of castor-oil. The ordinary aloetic ball is not well adapted for the mare while suckling.

SECT. 3.—MANAGEMENT OF THE FOAL.

HANDLING the foal should be commenced as soon as he is born, because it is at that time that he is most easily rendered tractable, and regardless of the presence of his attendant, who should make a practice of rubbing his head, picking up his feet, &c., long before he actually wants to do anything with those parts. But if these acts are postponed till they are really wanted to be done, the colt is wild and unmanageable, and neither physic nor anything else can be administered without a degree of violence very dangerous to its welfare. The foal is very liable to diarrhœa, which should at once be checked by a drench of rice-water, with one or two drachms of laudanum; this will almost always stop it if repeated after every loose motion. The sun should in all cases be admitted to the box, whether in winter or summer, and without it no young animal will long be in health. If the weather is very severe, with wet as well as cold, the upper half only of the door should be opened while the sun is out; but if the weather is dry, the mare and foal may be allowed to run into the yard, or, if not very cold and frosty, into the paddock for a short time. By the end of the month the foal will begin to eat kibbled oats which may be given in its own low manger, and with the mare tied up to hers. As many of them as the foal will eat will do good; and it never happens, that I have heard, that a young foal will eat more than enough of this food, which is the mainstay

of the young racer. Much of the success of this kind of stock depends upon their early forcing by means of corn; and as far as he is concerned, the mare as well as himself can hardly have too much, consistently with a continuance of health; but for the reason given in the last paragraph, caution must be used in forcing her until she is decidedly stinted. When the mare is tied up the halter should not be longer than necessary, nor should it be fastened to a low ring, as it has often happened that the foal has become entangled in it when low, and has been ruined by his own struggles, or those of his mother.

At six months old the foal is weaned, previously to which he should wear a light and well-fitting head-collar, by which he may be led about with a length of webbing attached to it by a buckle. This is more easily done before weaning than after, as the mare may always be made an inducement to the foal, and it will thereby be half coaxed and half led by a little manœuvring, whereas if entirely alone, the foal will struggle in order to escape, and will not so easily be controlled. Two quarterns of kibbled oats may now be given to the foal during the day, which, with the grass of summer, will keep him in high flesh, and by this time he ought to have grown into a very good-sized animal. By this treatment the foals are made strong and hardy against the advent of the winter season, during which time their progress is not nearly so fast as in the summer; and, in spite of every precaution, there are constantly drawbacks in the shape of colds, dysentery, &c. Feeding in this mode is the great secret in rearing racing stock; and though cow's milk, steamed turnips, &c., will make yearlings look fat and fleshy, you will never see that appearance of high breeding and condition which is given by corn, nor when put into training do they pass through that ordeal in the way which corn-fed colts and fillies may be expected to do. At this age, when fed in this way, foals are as mischievous as monkeys, and great care should be taken that they have nothing in their way which can possibly injure them. Brooms, shovels, pikes, and buckets must all be kept away from their reach, and all gates and fences must be carefully put in order. Indeed, with every precaution, they will strain themselves in their play; and if all these points are not attended to, the consequence is almost sure to be fatal to life or limb. During the winter young racing stock should all be carefully housed at night; and their corn may be increased to three quarterns a day as soon as the grass fails, with plenty of good sound old hay, and occasionally a few carefully-sliced carrots or swedes. During all this time they should still be constantly handled and led about; and when removed from one pasture to another they should always be caught and led by the length of webbing. The absence of this precaution is a fertile source of accidents, while its adoption is only an instance of that constant handling which must be attended to even were no removal necessary.

These remarks will carry on the treatment of the yearling to the time when he is broken in and put into training. At this time—that is, in the second summer, and as soon as there is plenty of grass—the yearling should begin to assume the appearance of the horse, with arms and thighs well developed, and with a fair allowance of fat, which, though not necessary for racing purposes, is always an indication of high health, and will make its appearance on the ribs of a stout and healthy colt in spite of all the exercise in the shape of frolics and gallops which his high spirits induce him to take. During the early spring months this cannot always be expected, from the nature of the food; but after May the flesh ought always to be rather full and round than wiry and free from fat, which latter condition indicates a delicacy of constitution unfavourable to the purposes of the racehorse.

PHYSICKING the yearling or the foal is sometimes necessary, when he is getting off his feed, or is bound in his bowels, or his eyes are becoming inflamed or otherwise indicating that he is over-corned. This is a very common state of things, and the remedy is a dose of the common aloetic ball, for which see the Diseases of the Horse, for the dose and mode of administration. About one-quarter of an ordinary ball is the smallest dose likely to be beneficial to the young foal.

CHAPTER VIII.

BREAKING.

Sect. 1.—The Stables necessary for Young Racing Stock.

The Stabling which has been described in Chapter VI. as sufficient for ordinary racing purposes, will not answer for the first housing of colts and fillies, which require more air and room than older horses, as they are a considerable time in becoming accustomed to the warmer and darker stables suited to horses doing strong work. Not only is a large roomy box required for each animal, but there must also be a yard, or small paddock, in which they may be suffered to take that exercise which they cannot yet receive artificially in an amount which will maintain their health. The breaking is generally commenced in warm summer weather; and there is no danger in allowing the colt to be at liberty during the day, at such hours as are not required to be occupied by the breaker's instructions. It is necessary, therefore, to have a series of airy boxes, separated from one another in the same way as those already described, but of a larger size, being at least eighteen feet by twelve feet, and with a very free circulation of air. These are much better made open to the roof, as they are never used in cold weather for horses, and will then serve for any other kind of stock if required; but at all events they should now be as airy as it is possible to make them. Many people object to the use of litter at this period, as being different to the cool grass to which the colt has been accustomed, and recommend tan as a much better kind of material for the floor of the box. I am inclined to think that there is great reason in this objection, and that the latter article is less likely to produce that contraction of the feet which so commonly occurs in the horse in training. A shady paddock, with as soft a turf as possible, should be provided; and here a colt may be turned out the first thing in the morning for an hour or two, and again at night for the same time, leaving the middle of the day for the breaker's manipulations. This plan also provides for the gradual alteration of diet, as the colt will always pick a little grass when turned out, and will only eat his hay during the long night; whilst his corn he has long been accustomed to, and will still continue to relish.

Sect. 2.—Leading Tackle.

Leading with the Cavesson on is the first thing to be practised, and it should be continued for two or three weeks without any further attempt at breaking, if there is plenty of time, and full justice is to be done to the colt. A roller is put upon the colt, and a crupper, with long hip-straps, by the presence of which he becomes accustomed to a loose sheet, or any other arrangement of clothing in his subsequent work. With this tackle on, and long boots on his fore-legs to guard against his striking them, the colt is led about the country, either by the breaker on foot, or mounted on a steady hack; and for a week he may generally be confined to soft turf, which will not require his being shod. Even on such ground as this he will be gradually accustomed to carts, waggons, droves of sheep, oxen, &c., and will daily acquire more confidence in himself and in his leader. No bit should be put in his mouth as yet, for its too early use while he is still shy and inclined to struggle only makes him more timid, and by far less manageable than with the cavesson alone.

Sect. 3.—Shoeing.

Shoeing must be commenced as soon as the colt is in a state to be taken on the roads, because it will often happen that he will be inclined to jump and plunge on the meeting of unaccustomed objects; and if his feet are unshod he will break the crust, and do an amount of injury which it will take many weeks to restore. It is better, therefore, to put some short shoes on his fore-feet; but his hind-feet may still perhaps be left in their natural state for some time longer. I do not myself see the

advantage of this delay, but it is very commonly practised with young racing-stock; and with wild or badly-handled colts it is often necessary, from the greater resistance which they make to the blacksmith behind than before. The shoes or tips should be nailed on very carefully, and they should be very neat and light in their make; the feet also should afterwards be regularly examined, and the shoes removed every three weeks. It is a very common practice for the blacksmith to cut out the heels of these colts, but I am satisfied, that by the use of tips only the heels may be left in a state of nature, and will require little or no clearing out until the horse is full-shod, and the frog and heel protected from the friction of the ground.

Sect. 4.—Tying-up in the Stable.

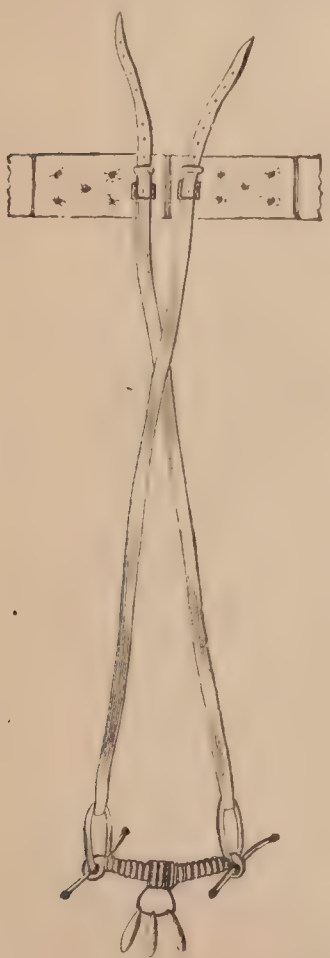
The Next Process is the Tying-up in the stall, which the colts may now be accustomed to, inasmuch as they have fully proved the power of the halter or leading-rein in their struggles to avoid passing objects; and they will not therefore fight much when tied up in the stable. The head-stall should fit very closely, and the throat-lash be sufficiently tight to prevent the colt from pulling it off in his efforts to get free; for if the young animal finds he can effect his object once, he is a long time before he ceases to try it again. The colt is often very fidgety; if so, he must be at once compelled to stand still, by the use of wooden balls attached to the fetlocks by leather straps, which soon accustom him to a steady position, from the blows which they inflict upon him when he struggles or moves rapidly from side to side. A breast-girth may also be put on as a forerunner of the breast-cloth; and it will also serve to prevent the roller, which is constantly worn, from getting back under the flank, and thereby irritating the wearer. All the ordinary stable practices may now gradually be taught, such as washing out the feet, dressing, hand-rubbing the legs, &c., and the colt should be made to turn from side to side of his stall at the wish of his attendant groom, who may easily conduct the whole process without the aid of any regular breaker, unless the temper of the colt is such as to demand extraordinary skill and address; and even here the groom accustomed to thorough-bred colts is often a better hand than the colt-breaker, who is engaged in breaking all sorts of animals, and will not bestow sufficient time upon the valuable racing colts and fillies. Now, without full time it is impossible to bring these young things into subjection, and the consequence is that their tempers are ruined, and they are rendered unfit for the purpose for which they are otherwise well qualified. Their feeding is so high that they are full of spirit, and will fight to the death if they are made to resist by ill-treatment or hasty breaking; it is, therefore, more by coaxing and gradual leading on step by step, from one point gained to another which is to be overcome, that this animal is vanquished, and made at last to yield his powers to the guidance of a young lad of twelve years of age, or even less.

Sect. 5.—Breaking.

Lunging may now be commenced, which will require the aid of a second hand, in order to compel the colt to progress in the circle by threatening him with the whip behind him. The cavesson, boots, roller, crupper, &c., are all put on, and a long leading-rein of webbing is attached to the ring in the nose of the cavesson, just as if the colt was going to be led out as usual. But instead of merely leading, the colt is made to walk round a circle on some piece of soft turf; and then, when he has learnt to do this kindly he is made to canter slowly round, the assistant walking behind him until he will progress by himself, which he soon learns to do. As soon as he has gone round the circle in one direction a dozen times or so, he may be turned round and made to reverse it, which prevents giddiness, and also any undue strain upon either leg. This process is repeated at various times throughout the breaking, and is the best mode of keeping the colt quiet by giving him any amount of work on the canter or gallop. It is not, however, used for the same purpose as in the ordinary breaking of hacks and harness horses, where it is made a means of getting them upon their haunches; an alteration from a state of nature which it is not desirable to effect in the racehorse. On the contrary, it is often necessary

to make him extend himself still more than he otherwise would; and the less he is upon his haunches the better. The bit, therefore, is never used in his mouth as a means of putting him back upon his hind-legs; whilst it is, on the other hand, used more to make the horse extend himself by playing with it, and slightly resisting its tendency to confine his mouth.

THE MOUTHING-BIT may now be put on, and its construction and form are of the utmost importance to the future delicacy of mouth which is so essential to the action of the racehorse. In no



kind of horse is the snaffle-bridle so desirable as in the racehorse, in which a curb is always a means of making him gallop in too round a style; and yet when he pulls very strongly this is a less evil than to let him get away with his rider, and either bolt out of the course or destroy his chance by over-running himself early in the race. Hence it is doubly necessary to guard against making the angles of the mouth sore, for if once they get into that state they are almost sure to become more or less callous and insensible. But if, during breaking, a snaffle of any kind, large or small, is used, this result is almost sure to occur, either in the horse's early fighting with his bit, or when "put upon it" in the stable. Instead of a snaffle, a bit without a joint is the simple remedy for all this. It should be made in the form of a circle or a segment of a circle, and with keys as usual hanging from its centre. This circular or segmental form is better than the straight bit, upon which the colt is apt to pull on one side, and to get an uneven mouth, whereas, when standing in the stable, and the reins are buckled to his roller, crossed over his withers, he can never do otherwise than get an even pull upon all parts of his mouth, whether he puts his lips close to one side of the bit or the other. This is a very important point in breaking all colts, and in racing stock it is doubly so, because of the necessity of preserving that delicacy of sensation without which they can never be taken round corners, &c., except by lying out of their ground, and hence losing considerable distance. But with this bit the mouth is gradually made, and without producing soreness in any part *which afterwards takes the bit;* and this is the great feature in its use, for as the tongue and gums take its pressure chiefly, so the angles of the mouth only touch it at the will of the colt, and it is when playing with it that they do touch at all, and then only to such an extent as to avoid pain to themselves. This bit, then, may be used on all occasions without fear until the colt is fit to take his gallops, when a strong snaffle may be substituted, and gradually supplanted by that small and fine kind called the racing-snaffle, but which need not be nearly so small for the horse broken to the segmental bit as for one "mouthed" to the ordinary breaker's snaffle. After the bit has been put in the mouth, no attempt at first should be made to induce the colt to play with it; but it may be suffered to remain in the mouth while he is led about by the cavesson, and without any side-reins being attached. When this has been done for a day or two, the side-reins are buckled on, and are attached also to the buckles on the roller,

crossing them over the withers. At first they may be drawn up very slightly, so as just to prevent the colt from putting his head into his usual position, and in that form he may be left in his box for an hour a day, besides the usual amount of walking out of doors with the bridle on. They may now be gradually tightened a hole or two per day, and also more so in the box than when led out, when the tightening should be very gradual indeed.

Some colts very soon begin to champ the bit, and play with it, whilst others are often sulky for a day or two, and hang upon it steadily, with the intention of freeing themselves. All, however, at last begin to champ, and when this is freely done, the breaker may teach the colt the intention of the bit, by making him stop and back when out of doors, by its means. The rings on each side should be taken hold of evenly by both hands, and the colt made to stand or back by steady pressure, but without alarming him. Kindness and gentle usage, with occasional encouragement, soon accustom him to its use, and he only wants ten days or a fortnight in order to obtain the desired result of its presence in the mouth, which is called "getting a mouth," and which is merely the giving to the sense of touch in the lips an extra degree of delicacy. When this stage is completed, and the mouth is quite under command, so that the colt will either come forward or backward by drawing his head in those directions with the bit held in both hands, the colt is ready for backing. During the whole progress of breaking, daily slow lunging and plenty of walking exercise should have been practised, so that the colt is not above himself, but is more or less tired each day.

Before actual Backing is attempted the saddle should be put on, and it should always be a roomy one at first, well-stuffed, and fitting accurately, so as to avoid all painful pressure. The withers especially should be closely watched, and if high and thin, the saddle should be proportionally high at the pommel. The roller has been hitherto the only kind of pressure round the chest, but it has gradually been tightened from time to time, so as to prepare the colt for the subsequent use of the girths which are required to retain the saddle in its place. This should be put on at first with the girths quite loose, and with a crupper in addition, because, having already worn one, the tail has become accustomed to its use, and it often prevents the saddle from pressing with undue force upon the withers, which are very sensitive and easily made sore. The colt should be walked out and lunged for a day or two with the saddle on before he is mounted, so as to accustom the parts to its presence; and it is even desirable to increase the weight of the saddle by placing upon it some moderately heavy substance of two or three stones weight, such as trusses of shot, or the like, gradually making them heavier, but never putting more than the above dead weight upon the saddle.

The colt having thus been thoroughly seasoned, may now be taken out and well lunged till he is tired, still having his saddle on; and during this exercise the breaker will occasionally bear considerable weight upon each stirrup, and flap them against the saddle, with the object of making a noise, to which the colt should be accustomed. It is a very good plan to have a leather surcingle made to go over the saddle, and to attach the buckles for the side-reins to this, instead of having them sown on to the saddle itself. When all is ready, and the colt is tired by his lunging, &c., he may be taken into the rubbing-house, as being close to the exercise-ground, and there the breaker himself or one of the lads may be put upon the saddle, using him, as in all cases with young horses, with great gentleness, and giving him constant encouragement by the hand and voice. Mounting is much better accomplished in the stable than out, and causes much less alarm, because the colt has been always accustomed to be more handled there, and is less inclined, therefore, to resist. The lad, or breaker, should get up and down again several times, and if the colt is good tempered he will generally allow all this to be done without the slightest resistance. In mounting there should be very little spring made, but the lad may hang about the horse as if fondling him, and bear his weight upon the saddle; then place one foot in and hang on steadily; when, if this is borne, the weight may be taken off for a minute or two, and then the lad may very gently and almost insensibly raise himself up to

the command of the saddle, after which he may steadily turn his leg over, and is then seated. When the lad has sat quietly upon his back for a few minutes, the side-reins having already been buckled to the leather surcingle, two additional reins may be attached for his use, though the chief dependence at first must be placed upon the breaker himself, who leads the colt, as before, with the cavesson and webbing. With this the mounted colt is now led out and walked about for an hour or more; after which he should be returned to the stable, and then the lad should dismount. On no account should this be attempted at first out of doors; for it has happened that on getting off there has been a fight to get on again, which has resulted in victory to the horse, whereas in the stable it can always be managed, and with the thorough-bred colt it is seldom wanted elsewhere, until he is quite used to it.

If there is no stable at hand with a door high and wide enough for this purpose, the colt may be mounted in the paddock, the breaker being very careful to engage his attention, and a third party being on the off-side to assist in keeping the colt straight and the saddle from giving way while the weight is being laid upon the stirrup. Most colts give way at first to this one-sided pressure, but they soon learn to bear up against it, and finally they do not show any annoyance at all. It will be found that any colt may be more readily managed by two people in a roomy stable than by three out of doors, where he is on the look-out for objects of alarm, and is always more ready to show fight; the only difficulty is the getting clear of the door, which should be wide and high, or it will offer an obstacle to the plan which must prevent its adoption.

The mounted lad should at first sit steadily and patiently still in the saddle, and should not attempt to use the reins, which might indeed be well dispensed with, but that few riders could balance themselves without holding something. I have found it a good plan to buckle the reins to the cavesson rather than to the bit, in those cases where the hands of the rider were not very light. The colt on leaving the stable often sets his back up, and perhaps plunges, or attempts to kick, which he seldom does in the stable, and less frequently in leaving it than when he is suddenly mounted in the field. If he does this the breaker should speak severely to him, and either keep down his head or the reverse, according to whether he is attempting to rear or kick. It is for the latter vice only that the rider requires the rein to the bit, as it serves to keep the colt quiet if the bit is suddenly checked when he gets his head down before kicking. But in rearing, the lad is likely to do mischief with it, and on the whole it is better, I think, to avoid all chance of using it improperly, unless the rider is very cautious and accustomed to the business of colt-breaking. When the colt is quite quiet and submissive, after several days' leading about, the lad may be trusted with the command of the bit, and may have the reins entrusted to him, the breaker still keeping the long webbing attached to the cavesson, and being always prepared to assist the lad, who, however, should now begin to try to turn the colt and stop him at pleasure, taking a rein in each hand, and using them wide apart, with the aid of his voice and heel. As soon as it appears likely that the lad can control his charge, the cavesson may be taken off, and the colt placed in a string of horses which are so steady as not to give occasion by their example for the colt beginning to plunge.

During the breaking it is always safer to keep the colt rather under-fed with corn, and until he is able to begin his cantering exercise he will scarcely bear an increase; but much will depend upon his temper; and if he is inclined to fret he will often lose flesh, and will demand more, rather than less, corn than usual. Bad-tempered horses, however, will always require light feeding during breaking, and extra time as well as care must be bestowed upon them. This subject is better understood now than it used to be, and fewer horses are spoiled than was formerly the case; still, however, there is often room for improvement, and the number of horses which are mismanaged at this time is by no means small. Thorough-bred horses will not bear bad treatment, in general, though some are certainly of such savage tempers by nature as to require to be cowed; still these are the exceptions; and the vast majority will, by early

handling, and cautious tackling and mounting, be broken almost without a single fight, or difficulty of any kind. If they find themselves hurt by bit or saddle, or by the crupper occasioning a sore, they show their dislike to the pain by resisting, setting up their backs, and refusing to progress quietly; but, unless there is something wrong, they will submit to being backed and ridden much more readily than the colts of the common breeds, which have seldom had a head-stall on their heads till a few days before they are backed. I have more than once ridden thorough-bred colts in tolerable comfort within a week or ten days of their being first bitted; but it is a bad plan, and the longer time their mouths are allowed to become accustomed to the bit the better they ultimately turn out. It will be many months before they are to be depended on under any circumstances; and when they get an increase of corn they are almost sure to attempt some kind of horse-play; but the boys easily contend against this, which is very different from the determined efforts of a colt to dislodge its rider. When all these points are thoroughly accomplished in the breaking it may be said to be terminated, and the training of the two-year-old commences; the only things yet to be learned are the use of the spur and whip, which should never be employed except as a punishment for faults committed; that is to say, they should never be used as an every-day practice, for, though every colt should be accustomed to them, it is very seldom that the opportunity is wanting of administering them for some fault or other.

CHAPTER IX.

TRAINING OF THE TWO-YEAR-OLD COLT.

Sect. 1.—Preliminary Remarks.

A Dose of Physic will generally be necessary as soon as the breaking is over, and very often it may be required during its progress; but by the occasional use of a bran-mash, and by giving a little green food with the hay, in most cases there will be no necessity for its employment while the breaking is going on, and while the quantity of corn is kept purposely below the usual amount. As soon, however, as the breaker thinks he dare do so, the corn is increased to the usual quantity, and then a dose of physic, preceded as usual by two bran-mashes, will prevent that feverish condition which so often comes on after breaking, when the restraints of the stable are substituted for the freedom of the fields. The trainer will, of course, be guided as to the strength and frequency of his physic by the constitution and state of health of his colt, and will only give it when necessary; though it should be borne in mind that there is always a tendency to inflammation, and especially of the eyes, in these highly-fed animals, and that the occasional use of physic is on that account more desirable than it would otherwise be. There is no doubt that all this might be avoided by giving them less corn, but then they would not be so well fitted for the purposes of racing, and therefore it is used with the full knowledge of its attendant evils. The next task for the trainer is to teach the young idea how to gallop to the best advantage, and in the best form, previously to producing that condition which shall enable his charge to last through a race as long as his competitor, or longer.

Teaching the yearling or two-year-old is a long business, requiring at least six or eight months for its due performance, including the breaking. Few colts, however, will be thoroughly fit to try before they have been broken a year; and unless they are found to be dead slow, and at the same time "set" in their frames, they should not be given up as hopeless till then. The usual practice is to employ three months in the autumn in breaking and giving them the first rude lessons in the canter, with the use of the spur, &c.; then to let them recruit for a short time, with the administration

also of a dose or two of physic; after which they are put into the trainer's hands to be taught their paces, for another three months—viz., to the middle or end of January, and generally till the frost sets in, by which time the experienced trainer begins to have some idea of their style of going, and to prognosticate what will be their future form.

When the weather is such as to make the ground too hard for strong exercise, the colts are generally thrown out of work, and physicked again, as well as put upon a lighter allowance of corn, with a few sliced carrots, and an occasional bran-mash. And this state of idleness lasts a longer or a shorter time, according to the intention of the owner to bring them out early or late in the season. In this determination he is generally guided by their appearance as to forwardness, and their style of going, which may be light, corky, and clever, fitting them for an early exhibition; or awkward, loose, and lumbering, requiring a much longer time to bring them out. Thus, in the month of January, the trainer must decide whether to go on with the training, in order to produce his colts for the spring events; or to reserve them till the autumn; or, finally, to put them by, when very large and awkward, until the third year, or, if useless, for sale.

Sect. 2.—Clothing, Dressing, and Stable Management.

The General Teaching of young stock for racing purposes is conducted, as I have already said, upon the same principles for all; and it is almost always carried on with the whole team of yearlings, from August to November in breaking them, and from November to January, inclusive, in teaching them the use of their legs, and to face crowds of all kinds, with noise, &c., such as they will be sure to encounter in their future races. The task which is now under consideration is the mere giving them practice in the hand-gallop, without any reference to condition, though keeping them in a high state of health all the while, so as to promote their growth, and to encourage the due furnishing of their frames with muscle, for which purpose the following various arrangements and aids in the stable and out of doors will be required.

Clothes of the lightest description are put on as soon as the breaking is carried far enough to allow their use, and the hot weather has ceased; and they should always be first employed in the large airy boxes before bringing the colts into the stables devoted to training. As the nights become cool these boxes may be gradually closed as much as possible, so as to prevent the colts from being chilled, and their coats thereby rendered long and unfit for their subsequent work. By the end of October they will generally bear a warm suit of winter clothing in the airy boxes, and sometimes, in very cold seasons, an additional rug over their quarters. Hoods and breast-cloths are seldom added till they are taken into training; but when the cold weather comes on they require them in their walking exercise, as the change from their warm stables to the cold air of the downs is generally very considerable at this season.

Dressing is now actively commenced, and the colt has the undivided services of a lad, just as has been already described in the training of the race-horse. The body-dressing, hand-rubbing of the legs, &c., are all the same, and the only difference is, that greater care is requisite in the use of the comb and brush, which always occasions some resistance, but in the yearling will often, if used roughly, produce a frightful display of temper. Hand-rubbing is now especially necessary, as the trial to the legs is very great, in consequence of the weight of the lad, however light, being greater than the age of the colt qualifies him by nature to bear.

The Stabling must be gradually made more and more warm and close, but with the greatest possible prudence and care. Many an eye is lost from a want of due precaution in this particular; but, at the same time, unless the stable is tolerably warm, it is impossible to keep up the health and the growth during the winter. In this first season, however, the temperature should be kept several degrees below that of the regular training stable; and it will suffice if it is warm enough for comfort, without much attention to producing excessive fineness of coat. The same may be said

of clothing; it must not be carried to the same degree as for older horses; but all these stable practices must be gradually increased, and at this time one suit is generally enough in a moderately warm stable.

Sect. 3.—Galloping and Sweating.

Galloping is next to be taught, and at first the only way is to get the colt into a hand-gallop in the way he likes best, not interfering at all, but allowing him to follow the trainer's hack at a steady pace, and without any other horses. Half a mile at a time is sufficient for this purpose, and a very gentle rise is the best kind of ground, as it will always be found that the colt learns his gallop more easily uphill than on level ground. At first there will generally be some difficulty with the mouth, and the trainer may allow the boy to come alongside him, when he will see whether the bit is adapted to his horse's state of forwardness and temper, and will either continue it or change it at his discretion.

It is desirable in all cases that racehorses should have a steady pull at their bits, without which they seldom extend themselves, but the steadier it is and the less strongly they pull the better; and consequently it is a great object to see that the bits suit them, and are neither too sharp nor too large. It is only by attention to these matters, and by avoiding hurrying the colt in his gallops, that he is brought to his best, and made to go in the form which is most calculated to insure success. The trainer, therefore, by riding by the side of the lad, instructs him either to give way a little or to take a stronger pull, according to circumstances; the former allowing the colt to extent himself more, and to go nearer to the ground, the latter making him gallop higher and shorter, and being only necessary in very long-reaching and loose-made horses.

Gallops are soon taken in the string, and the yearling is then either placed with others of his own age, or he is started behind older horses, and stopped at a certain distance, according to the instructions of the trainer, and before they have got to their top-speed. This plan answers very well, and is at first better than the putting a lot of young ones together, which being only half broken are apt to set up their backs all at once; and to take example from one another so as to be quite unmanageable from mutual excitement. When, however, they are becoming tolerably handy in their gallops, and free from these unruly proceedings, they are better trained and galloped together, and without the presence of more than one older horse to lead the string, which a yearling or two-year-old is seldom fit to do. These short gallops are continued from day to day, seldom exceeding half a mile in length, of which two per day is the outside allowance during the first two or three months of this kind of early training or teaching.

Towards the end of the time the colts may occasionally be made to lead the gallop, each in his turn, without an older horse before them, and at last should be galloped abreast; until they will stand which trial of temper quietly they cannot be said to have their education complete, independently of the training for the purposes of condition which has still to come. This running together will often lead to bolting and plunging, and therefore it should only be attempted when the colts have been doing good work, and after a preliminary gallop which has taken a little of the steel out of them. Two should first be tried abreast, and if they stand this well, on a future day one or two others which have passed the same ordeal may be added; and thus they are made to do in private what they will hereafter have to repeat in public, with the addition of the shouts and noises of the race-course. If during this imitation of a crowd any of them break away, they must be ridden next time by a better horseman; and, if necessary, a man of light weight must be put upon the offender's back, since it is better to risk his legs than to lose all chance of success in future by allowing him to get the upper-hand of his rider. Absolute racing at one another should be sedulously avoided, as neither the condition nor the temper is yet sufficiently perfect to allow of its being adopted, and the next three months will barely suffice for that object; indeed, it is never desirable to extend the colt to his utmost speed until he is to be tried, and if this could be deferred to his third year he would no doubt be all the better for it; but as the fashion now is to run races of

great value with the two-year-old, it is a temptation which few breeders will resist.

SWEATING will seldom be necessary until the spring, but sometimes a made-up yearling is very gross in himself, and is so fat and unwieldy as to be unfit for any kind of gallop. No amount of walking exercise and physic will reduce some very hardy colts, and the sweaters must be put on, or the legs will suffer to a certainty. When such is the case, the sweat should be run very slowly; and if a long two-mile hill, with a very slight elevation all the way, can be selected, there is little necessity for more than a canter, and even a trot will generally suffice, with the aid of plenty of clothing heaped on in the rubbing-house. If these slow sweats are repeated once a week, or every ten days, and the pace is never increased beyond that above specified, they will generally succeed in getting some of the beef off, and will enable the colt to use his limbs with greater freedom, and less chance of injury. When once the fat is stirred by these means, it is astonishing how rapidly it melts away; but the great point is to avoid chilling the colt in his first sweats, for too often they are the cause of chronic cough, inflammation of the eyes, swelling of the legs, &c. &c. If, therefore, they can be avoided at this time so much the better, but they may be adopted in preference to the continuance of a worse evil in the shape of two inches of fat upon the ribs, and a proportionate quantity in the inside.

SECT. 4.—SHOEING.

FULL SHOEING should always be adopted previous to any teaching of the gallop, and the short tips will not now suffice, on account of the battering which the heels would receive from galloping over an occasional piece of hard ground. The fore-shoes should be light and short, so that they are not likely to be torn off, and the hind shoes may be made with or without light cogs, according to the state of the ground. The form called the concave shoe is that best adapted for training purposes with most feet. In all cases the shoe should be removed and the feet pared at the end of every three weeks.

SECT. 5.—TRAINING THE EARLY OR MATURED TWO-YEAR-OLD COLT.

AT CHRISTMAS, or about the first week in January, as I have already said, the colts should be practised in galloping along-side one another, and many people at this time decide upon having a trial of half a mile at light weights, so as to weed out the good from the bad. Very little dependence can be placed upon this, but still it is often done, and requires little preparation; as the distance is not sufficient to injure their wind, and as they are all alike in their condition, it makes no difference, as compared with one another. But beyond this, a trial with a three-year-old is sometimes required, and insisted upon, but without the slightest utility as a test of merit. The eye of experience is, after all, the only guide, and by its aid the good judge will generally prognosticate which is the most likely to come out in good form, and at what period he will do so; but often the worst colt will show the best at this time, and will deceive the inexperienced into belief in his excellence, leaving the really valuable animal to show himself in his true form in the spring or following autumn. It is not generally the thick-set, quick, and pony-like colt which turns out the best ultimately, but the larger, more racing-like, and roomy animal, who at this time is perhaps all legs and wings, as compared with his well-furnished little companion. Six months, however, turn the tables—the legs and wings thicken and become furnished with muscles, and the colt then looks, and is, vastly superior to his former more successful stable companion. If, however, a trial is to be had, now is the best time, as the frost will almost always prevent it later, either from the ground continuing hard, or from its occasionally interfering with that amount of exercise which can justify a trial. As soon as this matter is settled, the colts should all be put by for their future performances; some being at once physicked, and exercised afterwards upon straw-beds, &c., so as to keep their condition as forward as possible, while others are entirely thrown by, and are reserved for the next autumn, or even the following spring. But we are now considering only one kind—namely, those

which are intended to come out early in spring, and which are the most mature and forward in their development. These should be walked out daily as soon as their physic is set, and kept on the straw-ride at least three hours a day, which may often be extended to four, if they are lusty and of good constitutions.

The Sexes are often kept Separate where the numbers are large and the stabling is suitable for the purpose. There are, however, disadvantages as well as advantages attendant upon the plan; for as two-year-old fillies and colts frequently run together, they are apt at that time to show the result of too rigid a separation. On the whole, however, I think they are better kept apart, and this is especially applicable to the fillies, which, from high feeding, are constantly coming "in use," and are then languid and dull, and unfit for work. They must always be eased a little at that time, as they are neither capable of bearing as much work as usual, nor willing to exert their powers. But the separation, if attempted, should be rigidly carried out; the stables should be quite distinct, and the exercise-ground at some distance, so that the wind should not waft the scent of the colts towards the fillies, or *vice versâ*. If this is neglected, they may just as well be in company with one another, as they are influenced by their sense of smell more than by the eye, and quite as much as by their auditory organs. When the fillies are galloped while in the above state, they can scarcely be made to extend themselves; and if brought alongside another, whether colt or filly, they lean towards it, and will not attempt to pass; hence the frequent variations in their public performances, and the difficulty of ascertaining the real powers of any filly, and especially during the spring, when they are constantly succumbing to these sexual influences, from the unnaturally high condition they are kept in.

Vicious Colts as well as fillies must be rigidly watched, and the first symptoms restrained by threats; or by actual severity. Every lad when riding carries a light stick, which is capable of giving a pretty severe blow, and with this he may threaten his charge, and he may even use it over the shoulder or down the side, as occasion may require. The trainer, also, catches hold of the colt by the bridle, and speaks sharply, or occasionally administers a blow with the fist to the muzzle, of which mode of correction horses have a mortal dread. This is chiefly useful in kicking colts who are not to be restrained by the stick; but if the trainer holds them firm and gives this blow, they are quiet directly. Rearing must be kept under by the martingale, or cured by the administration of a severe blow between the ears with a heavy stick, or by the old plan of breaking a soda-water bottle full of water between the ears. But the great preventive is plenty of walking exercise, without which colts are always mischievous, and inclined to become vicious, and with it they are generally manageable and quiet. Another essential point is the constant supervision of the trainer or his head man, who will prevent those tricks which boys of all classes are inclined to play. Mischief is not peculiar to the colt, but is common to all young animals, and if not prevented will be indulged in by the stable-lad towards his charge, and to the great increase of his tendency to vice, in consequence to his dislike to the practices of the lad, and his resistance against their continuance. For further remarks upon these points, and on stable vices generally, see the chapters on the Management of the Horse.

As these colts are all designed for an appearance in public, they should be ridden on to a steeplechase-course or race-course as often as possible; or, if these are not to be had, into market-towns or fairs, or any other gathering of people. Fairs are especially good introductions; and as they are often held upon common-land, the colts may be easily taken there, and yet kept out of harm's way. It is one of the great advantages of Newmarket as a training-ground, that races are so continually taking place there, and that colts may be easily shown the crowd, without much risk to either biped or quadruped.

By February, the trainer will have obtained some insight into the constitution and temperaments of his colts and fillies, and will begin to work them accordingly. Some will want strong work, with a vast deal of walking exercise and occasional doses of physic; others less of each, and the very light-carcased ones little more than walking exercise, and that amount of galloping

which will teach them their paces without being used as work. These last seldom require physic, unless they are out of health. The frost may generally be considered gone by the end of February, or the middle of March at latest, and during its continuance those colts intended for early running have been kept at exercise on the straw-beds at such times as they were not in physic.

They have been fed rather lightly, and are therefore hearty and ready for a few weeks' forcing, and for going through that kind of stimulating treatment of all kinds which accompanies training, and is in fact its very essence. Nine weeks are usually considered sufficient for the preparation of these young things, and they will seldom improve upon a longer amount of training without throwing them by. This time is divided into two preparations, between which a light dose of physic is given, occupying, with its mashes and the time necessary for setting, about a week. The very lusty colts may have the time equally divided, but the less stout ones should be allowed five weeks after their physic, and by consequence their first preparation is seldom allowed to last beyond three weeks; but if ten weeks altogether can be given them, the first portion may fairly be extended to the four weeks, as with the lustier colts.

THE FIRST PREPARATION is chiefly confined to slow work, with plenty of walking exercise, and, if necessary, one or two sweats. Great caution must always be displayed with these animals; but it is especially requisite at this time, when they are first introduced to work as opposed to teaching. On no account should anything be done until a previous examination has satisfied the trainer that the colt is in high health and spirits; and every gallop should be carefully watched, and its effects at the time noted, so as to serve as a guide to an increase or decrease of work. Unless the colts are very fleshy, a sweat will not be required until the end of this preparation; but if they put on flesh during the first ten days, in consequence of the augmentation of their corn, they may have one in the middle, and, if necessary, one also at the end. But it must always be remembered that young colts do not bear to be drawn fine, and the distance they run being short, their wind will generally last them; and that the act of stripping them of their fat stops their growth and interferes with the process of furnishing that is now going on. It is, therefore, only in extreme cases that sweats in clothing are necessary: but some stout and lusty ones will take a sweat of two miles, so as to scrape well twice during their first preparation. The pace is not required to be very severe, as the distance will almost always serve to bring out their juices, especially if a cloth or two is put on when taken into the rubbing-house. Training-ground with a long and gradual ascent is the great point in the sweat of the two-year-old, and when the trainer has the command of such an advantage, he need not fear any ill effects upon the understandings, unless he puts heavy sweaters on, when the hind-legs feel their ill effects up-hill as much as the fore-legs do down-hill, and hence the disadvantage of using them on this kind of ground. Curbs, spavin, and inflamed fetlock-joints are as often interfering with training as injuries of the fore-legs, and must be as carefully avoided. The hill, therefore, should be very slight, and, as I said before, when it is used the sweaters and weight of lad must be proportionately light.

If the sweats are not considered desirable, moderate gallops of from half to three-quarters of a mile, and at a steady pace, may almost always be given; and they may average about three times a week, with the addition of shorter spirts on the intervening days for the purpose of improving the style of going and giving quickness and smartness of stroke. The duration of the walking exercise at this time may vary from 2½ to 4½ hours a day, divided into two portions, varying in length according to the weather, which must always be allowed to regulate proceedings in this variable climate. In this way the three or four weeks of the first preparation are occupied, and at the end of it the dose of physic is given as already mentioned.

THE SECOND PREPARATION commences as soon as the physic is thoroughly set, which is given in the interval between the two. I have already said that some few colts will not require this, but if they do not have the physic they demand a week's quiet, and two or three bran-mashes, which to some

washy constitutions are equal to physic. By many persons it may be supposed that light-carcased colts, of blood not very stout, will be brought out with a shorter final preparation than the lusty and thick-made colt; but this is not the case, because they do not bear the same amount of work per week, and it must be distributed over a greater space of time, and increased with great care. Hence I have advised that these animals should have four weeks allowed after their dose of physic, and for their second preparation, and it will be found that even then less progress has been made with them than with those who will bear a little more bustling. It is true that there are, again, extreme cases of lustiness in which this shorter time will not suffice; but the average of stout-blooded and sound colts may be prepared in the four weeks, if they have gone through their first preparation without showing evidences of failure in their legs or constitutional powers. As soon as they begin their work, the whole of the colts and fillies for the first week are prepared for sweating, by giving them every other day a smart gallop of half or three-quarters of a mile, and an occasional spirt besides, to keep up their quickness. Plenty of walking exercise is still used, and the stable dressing and hand-rubbing must now be diligently practised. Some of the most forward colts will require a deal of work, even more than the above allowance, in order to keep them within themselves, and to do justice to their powers; others, again, will not require so much; but this, as I before remarked, must have the eye of the master of his trade to regulate it according to numerous fluctuating conditions.

At the end of about a week or ten days (usually the former) all may take a sweat, which is often the first—that is, when it has not been deemed necessary during the first preparation; but in almost all cases it will now be required. A sweat in clothes, however, is by no means invariably to be attempted, even at this time, for the previous work will in many cases reduce the colt so that it is quite evident he does not require it. But a sweat in some form—that is, a long gallop of two miles at a steady pace—is almost invariably to be now ordered, and by its effects the repetition at a future time, or otherwise, must be decided on.

The Feeding of Two-year-old Colts is by this time conducted pretty nearly the same as in the aged horse; for as he has always been reared on two or three feeds of corn, the increase to five or six, *with work*, will generally be borne with impunity. The same quantity in the horse unaccustomed to this kind of food would be sure to produce inflamed eyes, swollen legs, &c., but during the six or seven months from the commencement of breaking until now, the colt has gradually been fed with a more liberal hand, and will at this time generally bear five quarterns of oats per day, with seven pounds of hay. Beans and peas should never be given to two-year-olds, unless they are very washy indeed, and inclined to scour; even then they will seldom do good as a regular feed, and can only be recommended for particular occasions—as, for instance, when a colt scours for a day or two just before his appearance for a particular race, then a few beans may be given; but a continuance of them will always lead to disorder of the digestive organs.

The Continuance of Galloping and sweating after the first week, and the amount of each required, will be the study of the trainer; and he will be guided, as in all cases, by the effects of those previously gone through, always remembering that an over-trained horse is not only injured at the time, but is the worse for it ever after, more or less according to his age, constitution, or temper. Hence it is a fault on the right side if young colts are brought out too big; and as they will seldom injure themselves by the distance they run, there is not the danger on that account which is incurred by the older horse in two or three-mile struggles when unfit. After all, the races of two-year-olds are almost always in the nature of trials, and few masters would like to sacrifice the future prospects of their young stock, even with the certainty of bringing them out in such a form as to secure their races. It is better, therefore, in all cases, to avoid the risk of over-working them, and to have them brought out a trifle too big, although thereby they may not be in such a full state of preparation and fitness as might possibly be effected by drawing them finer. All this, however,

depends upon the future intentions of the owner and his trainer, for by this time they have often decided that certain colts will be useless except as two year-olds; and that, therefore, considerable risks may be run with them, in order to get the lengths of other horses in public, or merely to win what they can in their then form, believing that they are not likely to train on. Many such animals are brought out each year, and are thus made use of, though there is also no doubt that their not improving upon their two-year-old form is more frequently a consequence of their owner's determination thus to employ them, than that he has decided upon it prospectively. The usual practice is to select the most approved animals in the string, and use the less valuable ones for the purpose of public trials and competitions; but it sometimes happens that mistakes occur, and that those which are nursed up turn out far inferior to their stable companions which have in the meanwhile been sacrificed to them.

Sect. 6.—Trials of the Two-year-olds.

About a fortnight before the race the colt may be tried, and this should be arranged to take place a clear week after sweating, and with a previous day of comparative rest; that is, with only a short spirt to make the animal just "blow his nose." In every case, on the night before trial the colt should be set as for a race—that is, if he is not very washy and light in his carcass; if so, and the trial is pretty late in the day, he may be left till very early in the morning; but if the trial is early, he should always be set overnight. The trials are usually for half a mile or five furlongs, with 8st. 7lb. or 8st. 10lb. up. If a three-year-old is made the trial-horse, he will generally be expected to carry that weight, and to give the colts 2st. in addition, and the fillies 7lb. more. But it is seldom that a first-class racehorse is used for the trial-horse, and then it is not safe to give more than half this weight if any reliance is to be placed on the result, and unless it has been ascertained very lately that the trial-horse is in good form, when an allowance of 3st. may be ventured on with some degree of advantage. In the first place, the race ought to be run honestly and truly; and, in the second, there is a great necessity for the trial-horse being fairly beaten, if possible, and it is better that he should be beaten on his merits than by sufferance; and in spite of all instructions to lads, or even professed jockeys, and of the information received from them, unless they are ordered to make the most of their respective mounts, no reliable dependence can be placed upon the result. Every rider of a trial-horse has his bias either in favour of the horse he rides, because he rides him, or towards his opponent, because he hopes to ride a winning race upon him; and therefore he will, according to his wishes, very naturally lead himself and his master astray. The effect, however, of weight is well known, and great encouragement is afforded, if the beating has been on the side of the young ones receiving 2st.: but if, on the other hand, they have been beaten by the three-year-old giving them 2st. (or if he is a colt trying fillies, 2st. 7lb.), it is not to be supposed that they are then in a form which is likely to lead to victory. Few young colts bear constant trials, and the best plan is to try them at this time all together; putting as good men or lads up as can be selected, and depending upon this one "fly" for all present purposes. The three-year-old performer has given "the line" in reference to public form, and the result shows the respective merits of the colts in reference to one another, if the trainer has carefully watched their performances, and has seen how they got off together, and how they finished, which he can easily do in this half-mile struggle, either by being well mounted or by being on an elevated position at the finish. After this miniature race some of the young ones are sure to be off their feed, but by a little care they generally take their corn in a few hours, if it is not left in their mangers, and if they are in the meantime allowed their water as usual.

The animals should be at once marched off to their ordinary exercise-ground, and there clothed and walked as usual, so as to make as little fuss as possible—which, by the way, is a fertile source of irritation to them. Quarrelling in a loud voice among the lads about the comparative performances of themselves or their horses should never be

permitted for a moment, and at this time is worse than usual, because these young animals are already sufficiently nervous and excited from their first real struggle; for up to this time all their gallops and sweats have been conducted upon different principles, and they have never before been really made to feel their powers or weakness.

SECT. 7.—CONCLUSION OF PREPARATION.

Prior to the race the colt is treated in the same way as for his trial, and should be set early or late, according to his constitution. The last sweat is often given a week before running, but in light colts, and especially in fillies, it may be given ten days beforehand; that is, two or three days after the trial. Gallops, spirts, &c. will still be necessary, and must be ordered as indicated by the condition, with somewhat less of walking exercise than before, but not such an alteration as to make the colt fractious from being above himself. Quickness is essential to the short courses which they have to run, and too much walking is no doubt injurious to that quality. If, however, the legs are not capable of bearing a proper amount of galloping exercise, its place must be supplied by a little more walking than is otherwise desirable.

SECT. 8.—DIRECTIONS IN RUNNING.

In all cases the trainer and owner must decide upon what is to be done with the colt in the race; whether he is to be made much use of, or only put in to get some kind of estimate of his competitors without actually distressing him. But usually the orders are to win, if it can be effected without overpacing the colt, and without the use of the spur and whip to any extent. If, therefore, the jockey finds that he is at once outstrided, he is generally ordered to pull up, or at least not to persevere; but if he has a chance, and the stake is a good one—if also the colt is not engaged in any subsequent race of more importance—the jockey may be allowed to use his judgment in winning if he can, even with a struggle and the use of the spur. All this, however, depends so much upon the ever-varying circumstances of each case that no rule will apply; and at the same time, as it is notorious that these two-year-old performances are generally in the nature of trials, there is no impropriety in giving orders to the jockey to pull up, and more especially as, from the nature of the race, it is never made a means of betting to any great extent. The difference, therefore, is essential between this and the running a horse for the sole purpose of getting him beaten, either for the sake of the betting-book or the subsequent handicap.

SECT. 9.—MANAGEMENT AFTER RUNNING.

After the race, the colt is usually again more or less upset, both by the excitement of the contest, and also by the change of quarters, and the presence and noise of the crowd. It will generally be the best course to put him by for some little time, giving a dose of physic a few days afterwards, and putting him upon lighter food, with some lucern or Italian rye, or, if it is procurable, some ordinary cut grass. A few handfuls of either will freshen the colt wonderfully, and do him much good in general health. Whilst they are being given, however, no work should be done, but the colt should be put into a large and roomy box, and allowed to exercise himself there a good deal with two or three hours' walking exercise, but no gallops. According to the performance in the race will be the decision as to his future course; but in any case he will lie by for a couple of months, and will then grow, and furnish himself with a fuller display of muscular development. Sometimes, however, with second-rate colts or fillies, it is determined to run them again and again, but always with the certain sacrifice of the future form to present success.

If the colt has to appear in the autumn, he should go through the same ordeal as before, beginning three months before his race; but if he is to be reserved for his three-year-old performances, he is better entirely out of work until the end of August, during which time his clothing should be gradually removed, and he should be allowed a roomy loose-box, and a paddock to run in; giving him, however, three or four feeds of corn per day during the whole time. In this way he is freshened in constitution, and is prepared to undergo his more severe ordeal—viz., the training for the next year's running as a three-

year-old. One precaution should here be given—that is to say, the owner should be reminded that whenever the colt has been thrown out of work and laid by, he will require the cavesson and a lunge or two before he is again backed. Idleness causes all sorts of fancies and tricks, and if the lad were at once put on the colt's back after a short lying by, it would often lead to his being kicked off, and to the commencement of tricks on the part of the colt which are more easily prevented than cured.

CHAPTER X.

TRAINING THE THREE-YEAR-OLD.

Sect. 1.—General Remarks.

By Training the three-year-old is understood the preparation of the colt for racing as a three-year-old, in his fourth year. All racehorses take their age from the 1st of January, and consequently every one described as a three-year-old is in his fourth year, and every two-year-old is in his third year. If the colt has not been broken and trained for two-year-old races—that is to say, if he has passed his second year in idleness—he is always taken up early in his third year, that is, as soon as his coat is likely soon to lose its roughness, which it may be expected to do in May or June at the latest. If he is allowed to remain until the summer grass is well up, he gets so fat and gross as to require extra sweats to reduce him, and not only that, but in breaking he knocks his legs about, from the weight of his body, more than need be the case, and much more than is desirable. On all accounts, therefore, breaking should commence in May, and may be conducted as described for the yearling in the second year of his life, and when preparing for his two-year-old races. In many cases it is possible with the colt which is broken in the spring of the year to get him ready for trial, either in public or private, in October; and such is often the practice when the colt turns out handy, and is easily brought to his paces and into good condition. In all respects he is managed exactly as described in the ninth chapter, and must be treated just as cautiously in bringing him into the stable, and using him to his work. The only difference which may be made is in the number and length of the gallops which can be given *towards the end* of the preparation, for at first it must be just as gradual, and as carefully increased. The sweats of the two-year-old in the autumn may be half a mile longer than in the spring, and he may be used a little faster in his gallops, though the distance still should not often exceed three-quarters of a mile, and will seldom quite reach that length. The trials are also had in the same way, but the three-year-old trial-horse can now very seldom give more than 21lb. to colts, and 2st. to fillies, the difference between two and three-year-olds being greater early in the year than in the autumn. With these remarks it may be considered that this part of the management of the colt has been got through, and that he has been tried to be good enough to persevere with him for an early three-year-old race—that is to say, in the March of his fourth year, he being then a three-year-old. In order to effect this he must have a preparation of at least nine weeks' regular work, divided, as in the younger horses (described in Chapter IX.), into two preparations; generally giving, also, physic as there ordered.

Sect. 2.—Straw-Rides and Tan-Gallops.

As frost is a general accompaniment of the first months of the year, it is impossible to train horses without a straw-ride, or tan-gallop, if they are intended for an early appearance. Indeed, even for the date of the Epsom Meeting, in the end of May, these essentials are generally in request, for the length of preparations required for the severe pace at which the Derby and Oaks are run is such, that less than three months' constant work will seldom suffice; and as the frost is not often over in the month of February, no dependence can be placed upon the

natural turf until the middle of March; and even during that month training is often impracticable on any other surface. The straw-ride is generally made by using the long litter of the stable laid down round a large paddock; but though the use of this is superior to the hard ground, it is not sufficiently elastic to allow of a good gallop, and the horses must be kept to a three-quarter speed, and even then are often injured by their slipping, or by the sharpness of the angles round a small inclosure. A tan-gallop, however, made permanently on a course three-quarters of a mile in circumference, will admit of any speed short of an actual rally as in a race; and a horse may be made to extend himself well enough for anything but a final preparation upon the surface. It is the greatest improvement of modern days in training; and when first used by Lord George Bentinck, gave him a considerable advantage over other stables in the early part of the season. It is a questionable point, however, whether its use is not attended with the disadvantage of shortening the horse's stride, and altering his gallop; and for my own part, I am much inclined to think that it has this effect, and that though it improves the early form of the horse, it destroys to a certain extent that elastic and smooth style of going which is the perfection of the racehorse. No thickness of tan entirely does away with the hard substratum of frozen earth; nor is it like the elastic sod in receiving and resisting the stroke of the hind-legs. It becomes a question, therefore, if this is true, how far on the whole it is useful; and my belief is that no horse should be fully extended upon tan while the frost lasts, but that he may be well sweated and galloped at near his top speed, provided that he is never fully extended.

Sect. 3.—First Preparation.

Supposing the colt to be getting ready for a Derby exhibition, he will have been tried in October or November, then put out of work for a month, or until January, giving him a dose of physic after his trial, with a few carrots and mashes. By the 1st of January he may be set to slow work again, first taking the precaution to lead him out on the straw-ride with the cavesson on, if the weather is frosty; and, at all events, to use the lunge if he is inclined to be fresh, before putting up his exercise-lad. In frosty weather horses are always more inclined to set their backs up in play; and at the same time they are more likely to do themselves or their riders harm; hence the necessity for extra caution at that time.

The trainer will now have two months to get the colt fit for an appearance in March; and this period may be divided with advantage into two preparations, leaving the third or final one to the time subsequent to his private trial or race. Whatever may be the exact time of the race in March, the two preparations may be so arranged that there shall be from four to five weeks for the second, during which the work may be of such a character, with regard to severity and pace, that the wind shall be thoroughly free, and the frame divested of its fat. This generally leaves about four weeks for the first preparation, occupying the whole month of January, and perhaps the first week in February; and after this first preparation comes the dose of physic and the week's rest as usual. During this time, if the weather is open, and the colt pretty forward, advantage should be taken of the ground being in a fit condition for a gallop, to send the colt a sharp burst or two over three-quarters of a mile, and also to sweat him as often as is thought desirable; but, as sweats can be managed pretty well over the straw-ride or tan-gallop, they need not be altered from the day otherwise fixed upon in due course. With gallops it is different, and some concession must be made to the state of the ground which should be used when fit for the purpose, if the colt is sufficiently forward. It must be remembered, that when once a long frost sets in, it is often of six or seven weeks' duration; and this is a long time for a hearty colt to be without such a spin as shall open his pipes thoroughly, which nothing but a smart and brushing gallop will do. If, therefore, any opportunity on the eve of a frost is suffered to slip by it cannot be recovered, and by so much is the colt put back in his preparation. In all other respects, except the triflingly increased length of the work done this preparation is similar to that of the two-year-old, as given in the last chapter.

SECT. 4.—SECOND PREPARATION.

THE PHYSIC having been given as usual, and the colt entirely recovered from its effects, he may now, if the weather is open, be put in as strong work as his trainer thinks he can bear. At first his gallops will begin with three-quarters of a mile, in which he will take his turn in leading with the others, if he is not very much averse to that position in the string. All the colts, however, of every age, should be made to lead occasionally; for unless they will do so they are never capable of winning a race, because they will not leave their horses when called upon, in order to pass the winning-chair first. This, therefore, should be attended to, and they should take their turn in front, one after another; though there are often met with instances in which this position is preferred, and then, in the general way, it may be conceded to such animals when the rest of the string are equally good in any situation.

Sometimes, also, the fretfulness of the colt in company is so great that he can hardly be done justice to except by keeping him by himself, and giving him all his work, whether walking, galloping, or sweating, in solitude. It is true that such an animal is doubly excited when he comes to the post; and if this irritable condition should be worn off by any moderate time spent in waiting and gradually accustoming him to company, it would be better to do this. But often, in spite of all care and of every attempt to remove it, the irritability continues, and the only remedy is to train in solitude, and to trust to subsequent careful treatment for the removal of the bad effects of the race. It is not so much the one act of irritation which upsets a colt as the constant and daily fidgeting and sweating incurred in training him among lot or string; and hence it is that the necessity exists for removing him into quiet, if he is of this temperament. It is a great misfortune and drawback, and few horses of this kind are able to do much on the turf; but with one of good breeding and fine frame, the breeder will generally like to persevere until he has had an opportunity of trying his actual form.

THE CONTINUATION OF WORK under this preparation is to be very much on the principles laid down in the last chapter, adding about a quarter of a mile to the gallops, and one mile to the sweats, which may now be of three miles in length, and should not be given too early in the morning on account of the cold. The same varieties in temper, constitution, and health will be met with as in the two-year-olds, and will require constant modification in the treatment, but, on the whole, the difference is only in degree, the principles being identical. Up to this age, there has been very little occasion for practising the colt on any surface but a dead level, or slight ascent, as very few half-mile courses are of any other nature; but now it will be necessary to give him, or her, as the case may be, some practice over slight descents as well as ascents, because in many courses—such as at Epsom, for instance—there is a considerable variation in this particular; and unless the colt is galloped over similar ground, he will be sure to be alarmed and thrown out of his stride at a time when such an event would be a certain prelude to defeat. The gallops, therefore (but not the sweats, on account of the weight of clothing), should be over training-ground of the same character, being partly level, partly down-hill, and finishing with a slight rise. Every precaution should be taken against holes, ruts, &c., which are fertile sources of strains and break-downs; and indeed it is maintained by some experienced trainers that the latter accident never occurs except from uneven ground. This, however, it is impossible to prove or disprove, for no ground in the world is perfectly even, and therefore, in case of such an accident occurring, it may always be alleged, without fear of contradiction, that the ground was the cause, from its uneven nature. But as I have seen many a breakdown actually happen on ground where it was impossible to detect the slightest unusual inequality, I am satisfied that it is sometimes from other causes, and I believe from the muscles losing their tone in consequence of being overtaxed.

The last sweat is generally given to the colt about a week before running, and is usually pretty severe, but it is often given without "sweaters" in modern days. In this, as in all other cases, the discretion of the trainer must be called into play. Generally, however, the increase of age allows of an extra degree of liberty being taken,

and there is not that excessive degree of caution to be observed as with the early two-year-old. The gallops may be smart during the last week, and on the second day before the race a rattler should be given, so as to open the colt's pipes well and make him blow smartly, but not so as to distress him. If he comes round from this thoroughly in a few minutes, and is lively afterwards with a bright eye, and without any appearance of fatigue, it may be conjectured, in accordance with other signs of condition, if existing, that all is well, and that the race will be borne with impunity, and contested with as much vigour and lasting quality as can be got into the colt without a longer preparation later in the spring.

Sect. 5.—Trials.

A fortnight, or perhaps even ten days, before the race, and generally the day before the last sweat, a trial may be had in private with all the three-year-olds which are forward enough; and among them there is generally a trial-horse which has been out in the autumn, and has thus got the length of some one or more dreaded competitor, or, at all events, of some colt or filly whose form is well known as compared with this anticipated rival. These being all equally prepared, are started and tried over a mile, or, at most, a mile and a quarter, which is quite as far as this short preparation will allow; and according to the result is the opinion formed of their qualities.

This trial may be supposed to take place early in March if the weather will permit; but as there are few races of importance for three-year-olds alone until April, it can only be intended to run these forward colts or fillies in mixed trial-stakes or in handicaps in the month of March. For this purpose a well-known trial-horse must be obtained, which has been run in one or more handicaps at a known weight: and he must be weighted in this trial accordingly, giving as much as, or rather more than, he would do in the actual race if engaged. The reason why he should give more weight is, that the distance is generally less than that which is to be actually run, on account of the deficiency of preparation, which has hereafter to be made up. Now, it is well known that it takes a greater allowance of weight to bring horses together in a short race than over a longer distance, and therefore it is now necessary to give the superior trial-horse a little additional weight.

With these remarks the subject of training may be concluded, as the final preparation for the subsequent three-year-old races in no respect differs from that described in the sixth chapter, except that the sweats are usually limited to three miles, or three miles and a half, and the gallops to a little over the distance they have to run, which varies from a mile to a mile and a half, or in some of the handicaps to two miles and upwards.

Accidents.—During the course of all these preparations numberless accidents will occur, such as sprains, breaking down, curbs, blows, &c. &c.; together with diseases of the limbs, as spavins; and of the general system, as distemper or influenza, strangles, and so on. All these will be found treated of under the General Diseases of the Horse, and may be managed as there directed. For further observations on Feeding and Watering, see the same article.

CHAPTER XI.

THE EXERCISE BOYS, HEAD GROOMS, AND JOCKEYS.

Sect. I.—The Boys.

The Management of these little bipeds requires nearly as much experience as that of the quadruped whose training I have entered into at such length. In their selection, also, some power of discrimination is required; for there are many lads cut out by nature for this pursuit, and others again who would never learn the trade so as to be sufficiently proficient to ride an ordinary gallop. The chief points requisite are—first, neatness and compactness of frame, with small heads, light bones, and altogether an under-size, a

compared with other lads of the same age; secondly, a certain amount of intelligence, but of that steady old-fashioned kind which is now so seldom met with, and which leads to a concentration of the bodily and mental powers upon one object: in other words, there should be "an old head upon young shoulders." It is impossible to be always on the watch for tricks; and, in spite of every precaution, a thoroughly mischievous lad has the power of spoiling the horse under his charge, and, what is worse still, of corrupting by his example his stable companions. Hence great caution is required in the choice, and for this reason lads are selected who are born of fathers brought up to the same trade, and thoroughly imbued with a fondness for the vocation. Without this last feeling in the lad he will never take kindly to the business, and with it he will soon learn to make himself useful.

The age at which these lads are likely to be serviceable is generally from eleven to fourteen years old, before which time they seldom are bold or strong enough to undertake the really arduous duties of an exercise or stable boy. It is true that they may often be put to rub legs, or do any other odd jobs about a stable, at a much younger age, but these early lessons are better given in the hack-stable, or in any other than that of the racehorse. Indeed, in most cases boys of that age, if brought up among horses, are quite handy with them, and can ride pretty well, and perform any of the usual stable offices in an ordinary way. When this is known to be the case, and the boy is of proper size, intelligent, active, industrious, and capable of riding an ordinary horse, he may as well be articled to the trainer at once. After this he has to be taught all the ways of the training-stable—the hand-rubbing, the careful dressing, &c.; and then he may be put upon an easy horse to ride, and gradually and carefully instructed in the mode of holding him, without making him pull, &c. He should be put in the middle of a string of horses, and instructed to keep his place in the gallop and on no account to get nearer to his leader than when he started.

The trainer, or his head groom, will undertake the task of instruction, and will see that the lad sits properly on the saddle, with his stirrup-leathers of the right length, his feet well home in them, and his knees in their proper form and sufficiently forward on the flaps of the saddle. He will always have to caution him to keep his hands down, which everyone instinctively gets up when learning to ride, but which, on the training-ground of all places, should be kept as low as possible, and on each side the horse's withers, with a rein in each hand, and the off-side rein in addition held in the left, so as to steady both by lying upon the withers. He will instruct him in the use of the knees, which are the main agents in keeping the seat, and tell him to keep his toes in towards the side of his horse, and his heels down. He will also explain to him that he must not attempt to confine his horse too much by pulling dead against him, but must give way to his mouth, and only use his power just enough to keep his horse in his place, which he will do better by humouring him a little, and giving an occasional pull, than by constantly hanging on the bit, which irritates most horses, and makes them more inclined to pull than to give way. But by avoiding this dead pull, and, on the other hand, varying it so as sometimes to give a little and then to return to the charge and restrain the horse, the mouth is prevented from getting dead, and the boy, light and weak as he is, keeps the control of his powerful horse. After a time, when the lad becomes quite at home with his easy-going and quiet horse, he may be changed to another rather more flighty, and he may also have charge of him entirely, if he has mastered all the practices of the stable with the quieter one of which he had previous charge.

In process of time, the lad will learn to be able to do exactly what he is ordered to carry out, and will ride his horse so as to make him extend himself over the precise distance and at the exact rate which he is previously told. But all this is a work of time, and is generally an imitative process, being handed on from generation to generation, or rather from stage to stage, by the elder boy to the next, and so on. It is some time generally before a lad is able to lead a gallop so as to regulate the pace, and until then he is only required to keep his distance from the horse before him, and to avoid being unhorsed in the gambols

or vicious attempts of the animal he is mounted on. But in time he learns to lead or to ride trials; and as some lads are quicker than others in acquiring this knowledge, so the head groom or trainer uses them accordingly, and places them upon such animals as are within their powers. But besides their out-of-door occupations, the lads have also to perform all the stable duties of hand-rubbing, dressing, &c., which are better here minutely described as part of the duties of the stable-boy.

Dressing the Racehorse does not differ in principle from the ordinary dressing of any other kind of well-bred horse, but it is carried out to a greater extent, and is continued for a longer time than any other, except the highest class of hunters. The first rough dressing in the morning before exercise is scarcely worth noticing, as it only consists in getting rid of any wet or dirt incidental to the lying down in the litter, which is often unavoidably stained in the night, and in smoothing over the whole coat with a whisp of hay, and the rubbers afterwards. But after the exercise the process is a long and tedious one, and is intended to answer a double purpose, viz., first of all to get rid of any dirt either accidentally occurring from external sources, or as the result of the sweats drying in the coat, and, if remaining, clogging up the pores of the skin; secondly, by means of friction, to increase the activity of the circulation in the skin, and thus allowing it to go on as rapidly as is required during the violent exercise to which the horse is submitted.

On coming in from exercise, then, the boy rides his horse into his stable, and turns the animal's head round, away from his manger; he next, after dismounting, takes off the boots, hood, bridle, &c.—indeed, all except the quarter-piece and the saddle, which should not be removed for some little time, but which should just be lifted for a moment and then replaced. The breast-cloth and front of the quarter-piece are turned back over the saddle, and the whole fore-quarter of the horse exposed and well dressed over, beginning with the head, which should be first brushed over, then well whisped with a nandful of hay, matted, as is always done in the stable, into "a whisp" as it is called; and finally rubbed smooth with a rubber; but this not till the neck and fore-quarter have been successively brushed over and whisped; after which the mane and forelock are combed out, and brushed down with a damp brush. When this is done the horse is turned round to his manger, and his head-collar put on and racked up, and then with his muzzle on, he is made safe in case of his exercising his teeth, which most of these thin-skinned animals will do, even without vice, when their flanks are brushed or even whisped.

The next process is to pick out the feet and wash them, as well as the legs, which the lad does, taking his bucket and brush, and well picking out, and then brushing the feet well, after which he washes the legs, keeping on the near side in all cases during the whole business. A flannel bandage is then put upon each of the fore-legs, and remains on till the horse is dressed; preventing them from becoming chilled by the wet, and also guarding them from blows in the kickings and struggles of the horse, which are generally pretty constant and strong in this part of the process. Having done this, the saddle is taken off, and the back and sides, as well as the quarters, are brushed over first, then well whisped, and finally smoothed down with a rubber. The brush should never be used during the shedding of the coat, and the curry-comb is seldom or never required with thorough-bred horses, as a thick coarse coat, such as would demand this instrument, is almost unknown in the racing stable; and, if present, is always removed by clipping or singeing. The quarter-piece and breast-cloth are now replaced, always taking care to throw them first well forward over the withers, and then to draw the former smoothly over the loins, so as to keep the coat down, which, without this precaution, would stand up in all directions when next the cloth was taken off. The roller is now put on, doubling the long part over the pad till it is on the back, and then throwing the former part smoothly over so as to avoid a crease. It is then buckled tightly up, and the hood is spread over the loins to prevent a chill after the exercise; but it is not left off when the stables are locked up.

The tail is now combed out, and the bandages are taken off one by one, keeping them on till the lad is ready to rub each leg in its turn. In this part

of the dressing the boy goes down on his knees under the horse, who always permits this to be done without resistance, and, taking a linen rubber, he proceeds to dry the leg carefully, and then to rub it well with the two hands, running one down on each side, and working the fingers into the spaces between the ligament and tendon. When this leg is dry, another is bared of its bandage, and rubbed in the same way as before, until all four are done, when the dressing is over, and the bed is shaken and smothed with the pike; after which the feed is given, and the stable is locked for the present.

Some horses vigorously resist the dressing, and are dangerous without great quickness and caution on the part of the boy; but if the lad is good-tempered, yet firm, and neither shows fear nor annoyance, but patiently waits till the horse lets him do what is necessary, in almost all cases he gets his way, and is allowed to do what he requires. When once, however, a horse is made vicious by fear or mischief on the part of the boy, he is a very troublesome customer, and few lads can manage such an animal, if of the worst kind. The head groom must stand by, either to dress him himself, or keep him in fear during the process; and even a man will sometimes fail in doing everything which he wishes with the hindquarters of some horses that have been spoiled by ill-management. Generally, however, these animals will suffer their little attendant to do more than any one else with them; and it is a good test of the merits of the lad if it is found that he can manage, without difficulty, a horse of thin skin and general irritability. When he can do this, and also ride him to orders, he is a valuable addition to any training-stable, especially if he keeps his mouth shut, and does not divulge the secrets which he soon guesses at.

Sect. 2.—The Head Groom.

The stable or exercise boy generally aspires to be either a head groom, and finally perhaps a trainer on his own account, or, on the other hand, a professed jockey. Such are the ambitions of these juveniles; and if clever and industrious, with good opportunities, they may become one or the other, or often all three in succession. The lads who speedily become heavy and bony are thereby rendered unfit for anything but the situation of head groom; but as only one or two men are generally kept about any racing establishment, and as there are as many boys as horses, the surplus are obliged to seek for common situations as grooms when they can no longer ride a suitable weight, which should seldom be more than 6st. or 6st.7lb. If, however, the lad has the head suited for the place and can acquire and retain the confidence of his master, he is perhaps made the head groom of the establishment, and has the superintendence of all the stables, as well as the management of the gallops and sweats, in the absence of the trainer or under his orders. He gives out the corn, and generally feeds every horse himself; seeing also that the hay is given, but generally weighing this out or guessing it for each lad, who takes it to his horse's rack. Besides these offices, his hands are generally full in a large racing establishment with preparing and giving mashes, balls, and drenches, or applying charges and dressings to legs, blistering, applying lotions, &c., all which are constantly being required. He has also to superintend the shoeing, if the trainer himself does not take this responsible office and see to this important part himself. All these several duties must, in very large establishments, be divided between two or three hands; and in some a clerk also is constantly kept, who notes down every gallop, every sweat, every time a horse goes out of the stable or is shod, and, in addition, gives out the physic, and keeps an account of the exact strength. Without these precautions endless confusion would result where thirty or forty horses of different ages are being trained, because when it is found that a dose of three drachms of aloes will not suffice, more must be given next time, and sometimes it is increased to five or six drachms; but if this larger quantity were given by mistake to an animal of delicate constitution, the extra purging might be fatal, or at all events might throw him out of health for a long time. The head groom should also be a good, strong, resolute horseman, and of a tolerably light weight, so as to be able to undertake to manage those horses which are getting above the powers of the lads. In small

establishments the breaking is conducted by them also, but in large ones there is generally one man whose sole business is the breaking of the colts and fillies, of which he has always some three or four in hand, and which number will fully occupy one man's time, if they are to be thoroughly and effectually got through their pupilage.

Sect. 3.—Jockeys.

Various are the gradations in this class, some of whom are men of considerable wealth, whilst others are merely the stable lads promoted for the time being. A thousand pounds, and even double and treble that amount, are not uncommonly promised and given for a successful execution of orders over the Epsom or Doncaster course; and yet the regular fee is 3*l.* for an unsuccessful, and 5*l.* for a successful ride. These prices, however, are understood to be given only when the jockey is on the spot and happens to be unemployed; for if regularly engaged there is generally a special arrangement made, varying according to the rank which each holds in his profession. At first sight it may appear that the above-named sums are an ample renumeration for a few minutes' ride; and so they are when the rider is often engaged, and his habits are such as to lead him to husband his money. Too often, however, the reverse is the case, and the lad who up to a recent time was limited to bread and cheese, with a hearty meal of beef and potatoes, now requires champagne and French dishes, has a valet, and spends his thousands even more rapidly than he earns them. The instances in which money has been saved in this class are not very numerous, but some have occurred, and often it has enabled them to undertake training establishments requiring considerable capital. All things considered, and taking into account the temptations to which this class are subjected, it is not perhaps to be supposed that they are over-paid, especially as it is only in a few cases that high rewards are given for successful performances. It must be remembered also that their office is a dangerous one, and that at all times life and limb are jeopardized in the pursuit. The instances of both suffering are numerous enough; and besides this, the length of time during which they are employed is not generally very great. The nerve necessary for riding seldom lasts long, and before even this fails, fashion or the fickleness of the master may lead to neglect.

Taking them as a class, jockeys are above the general run of the men who are connected with the turf, being more honest than many of their masters, and seldom being known to take the bribe which would always be ready for them if acceptable. The reason for this may be a low one, as that honesty is necessary for success, and that they dare not stoop to bribery; but nevertheless there can be no doubt that as a class they are above suspicion. Unfortunately, of late years, the orders to ride behind have become so common that they could scarcely be refused by the jockey, and he is now expected to ride to orders in most cases, though there are still some who would refuse such a mount.

In important races, like the Two Thousand Guineas, the Derby, the Oaks, St. Leger, &c., the jockey generally rides his horse several gallops before the race; but in the great majority of races he is never on his back until the bell for saddling has rung. It is, therefore, extraordinary that he should be able to do what he does, but receiving information from the trainer as to the peculiarities of his mount, and as to the best mode of displaying his powers, he is not quite in the dark as to his capabilities, and will generally ride him to perfection on the first occasion if he is an accomplished artist in his line. The previous handling of a young horse is however a great advantage, and few jockeys should be put up without it. Nothing, indeed, but the desire to keep up an uncertainty as to the intended rider ought ever to prevent it in such a case as any of the above-mentioned important races.

The jockey, when engaged, is told the weight he has to ride, and is expected to come to scale exactly to that weight, finding his own saddle, but the bridle being generally that which the horse is accustomed to. One pound is the usual allowance for single-rein bridles, and two for double-reins or curb-bridles; and when a snaffle is used with double-reins and a martingale, but without a curb-bit, the calculation is generally a pound and a half. If the jockey is over-weight, it must be declared at the time of going to scale.

The modes of sweating and living are much the same as for pedestrian purposes, in the chapter describing the training for which, full directions are given for sweating, dieting, &c., applicable also to these cases.

GIVING A LEG.—Jockeys in all cases, and generally all riders of thoroughbred horses in training, mount their horses by receiving the assistance of a second party, who lifts the jockey or lad into the saddle by means of the bent leg. The mounting party stands facing the saddle, and takes hold of the pommel with the left hand; he then bends his left knee, and, giving a spring, is aided by the assistant's hand lifting him into the saddle. The object is, first, to avoid deranging the saddle, which being small and light will not bear much side-pull; and secondly, to avoid being kicked by the horse in the ordinary kind of mounting by the stirrup, which in large horses and with small riders is attended with considerable difficulty, and gives occasion to the horse to use his hind-legs with great risk of injury to the rider.

CHAPTER XII.

EXPENSES.

SECT. 1.—EXPENSES OF BREEDING.

THE average expenses of breeding first-class thorough-bred stock may be taken as follows:—

One-fifth value of brood-mare .	£30
Expense of covering, travelling, and keep for six weeks . . .	50
Keep of mare for one year . . .	25
Keep of colt up to commencement of training, about a year and a half	45
	£150

Thus, without any allowance for risk, or for barren mares, dead foals, &c., every colt may be considered to cost 150*l.* before training as a two-year-old, and at least 50*l.* more before he can be put into training as a three-year-old. But, making every allowance, and taking into consideration the above risks, perhaps it may be calculated that colts and fillies together, of any but the very highest blood, may be bred at about 150*l.* apiece.

SECT. 2.—EXPENSES OF TRAINING.

The usual charge for public training is two guineas a week, to which are added heavy expenses for travelling, and boxes, when in running; but as few horses are in training during the whole year, they may be calculated at about 75*l.* per annum per horse. In addition to this charge, however, there are numerous extras in most establishments, besides travelling expenses. Private training varies so much that no calculation can possibly be made of its expenses. The entrance moneys are well known, and vary from two guineas up to 300*l.* All other expenses fluctuate so much between those attending upon a Derby horse and the trifling outlay upon a small country meeting, that no useful calculation can possibly be made.

CHAPTER XIII.

THE LAWS OF RACING, BETTING, &c.

SECT. 1.—RULES CONCERNING HORSE RACING IN GENERAL.

1. No race-meeting shall commence before the week which includes the 5th of March, nor continue beyond the week which includes the 22nd of November, unless the week including the 25th of March shall be Passion week, in which case race-meetings may be held in the week preceding.

2. *Racehorses* take their ages from the 1st of January.

3. *Catch Weights.*—Catch weights

are, each party to appoint a person to ride without weighing.

4. *Feather.*—A feather weight shall be considered 5st. 7lb., and the usual declaration must be made when the jockey carries more than that weight.

5. *Maiden Horses.*—A maiden horse or mare is one that has never won a plate or sweepstakes in any country.

6. *Plates.*—A plate is any prize given to be run for, without any stake being made by the owners of the horses to go to the winner.

For a plate, no person can run, either in his own name or in that of any other person, two horses of which he is wholly or in part owner, unless permitted to do so by a special clause in the conditions.

7. *Sweepstakes.*—Where a stake is deposited by the owners of the horses, which is to go to the winner, such race is a sweepstakes, and if an additional sum of money, cup, piece of plate, or other reward be offered to the winner, the race is still a sweepstakes, though such addition should be denominated a plate by the donor.

Three subscribers make a sweepstakes, and if a stake has the required number of subscribers at the expiration of the time of closing, and the number is afterwards reduced by death (or, in the case of a produce stake, by failure of produce), the race is not void as long as there are two horses left, the property of different persons; and if the number is reduced to two it is still a sweepstakes.

When the public money added to a sweepstakes is less than 50 sovs. all forfeits and entrance money shall go to the winner, or some other horse engaged in the race.

8. *No race for less than 50 sovs.*—No plate or sweepstakes shall be run for of less value than 50 sovs., including the winner's own stake, excepting in cases of prizes left by will. This rule not to prevent the walking over for a less sum.

9. *Post Match or Sweepstakes.*—For a post match or sweepstakes each subscriber names two or more horses of the proper age, but can run only one, unless a greater number is allowed by the conditions of the race.

10. *Omissions, how supplied—Of Weight.*—When any match for sweepstakes shall be made, and no weight mentioned, the horses shall carry 8st. 12lb. each, and if any weight is given the highest weight shall be 8st. 12lb.

11. *Of Course.*—When any match or sweepstakes shall be made, and no course mentioned, the course shall be that which is usually run by horses of the same age as those engaged, viz.:—

	If at Newmarket.
If yearlings, 2 furlongs . .	Y.C.
If two years old, 6 furlongs .	T.Y.C.
If three years old, 1 mile . .	R.M.
If four years old, 2 miles . .	D.I.
If five years old or upwards, 4 miles	B.C.

And if the horses should be of different ages, the course shall be fixed by the age of the youngest.

12. *Of Day.*—If no day is mentioned for a race it shall be run on the last day of the meeting, unless otherwise agreed by all the subscribers.

The stewards of a meeting have the power, in cases of urgent necessity, of putting off the races from day to day until a Sunday intervene.

As to Nominations.

13. *Description necessary.*—In all nominations for sweepstakes and plates, the horse or mare entered must be clearly identified. The name of the sire and dam must be given, and if the dam has no name in the Racing Calendar or Stud Book, such further pedigree and description must be added as will distinguish the horse intended to be named from any other of a similar pedigree. If the dam was covered by more than one stallion, the names of all of them must be mentioned.

14. *When the Name is sufficient.*—If a horse has once been entered with his name and pedigree in a race published in the Racing Calendar, it will be sufficient afterwards to mention him by his name only, even though he has never started; and in entering a horse for the first time by his name in several races closing at the same time, it will be sufficient to give his pedigree in one of these nominations, and his name only in the others.

If the name of a horse which has run be changed, it is necessary, in entering the said horse, to give his old as well as his new name in every nomination until the change has been duly registered in the Book Calendar; and if his name be changed again, all

his names must be repeated for the like period; but if a horse's name be changed before he has run in public, it shall be sufficient to give his new name in the first entry made after such change.

15. *When the Age must be mentioned.*—In naming for a race in which horses of different ages are admitted, the age of the horse named must be mentioned.

No yearlings can run for public stakes. No two-year-old shall run in any handicap before the 1st of October, and then only with horses of the same age. No two-year-old shall run more than six furlongs for any plate or sweepstakes till the 1st of September. No three-year-old or upwards shall run a shorter distance than five furlongs for any plate or sweepstakes.

16. *Nomination of Foreign Horses.*—No horse foaled out of the United Kingdom shall run for any race until his owner has produced a certificate of some racing club of the country where the horse was foaled, or from the mayor or other public officer of the district, stating the age, pedigree, and colour of the horse, and the marks by which it is distinguished; and also a certificate of the horse's age, signed by a veterinary surgeon, being a member of the Royal College of Veterinary Surgeons, or holding the Highland and Agricultural Society's diploma. Such person to be approved of by the Stewards, and the said certificates to be lodged at Messrs. Weatherby's office in London.

No horse, though foaled in the United Kingdom, which has been exported before running in any public race, and is afterwards brought into this country to run, shall be qualified to start until the owner or person in charge of the horse has produced a certificate of his age, signed as above.

The production of these certificates shall not preclude the Stewards from ordering an examination of the horse's mouth by a veterinary surgeon appointed by themselves, as provided in Rule 69, if they shall see reason for so doing.

17. *Incorrect or insufficient Description a Disqualification.*—If any horse, &c., shall be named or entered without being identified as before directed, he shall be disqualified, but his owner shall be liable to pay the forfeit, or, if a play-or-pay race, the whole stake.

18. *Fraudulent Entry a perpetual Disqualification.*—If a horse should fraudulently run, or be entered to run, for any race by a false description, such horse is thenceforth disqualified for running in any race; and the owner shall be compelled to return any sum of money won in plates, matches, or sweepstakes (whether handicap or not) which the said horse may have won.

When a horse has been struck out of an engagement by the person legally entitled to do so, if the horse be permitted to start by mistake for the said engagement, he shall not be entitled to receive the prize though he come in first; and if he have been allowed to start in consequence of fraud or misrepresentation on the part of the owner or other person having charge of the horse, that person shall be warned off Newmarket Heath, and the horse shall be disqualified from running for any public race thereafter.

19. *Qualification dates from time of Closing.*—In naming or entering for any race where there shall be any particular conditions required as a qualification to start, it shall be sufficient if the horse were qualified at the expiration of the time allowed for naming or entering, and he shall not be disqualified by anything which may happen after the expiration of that time, unless so specified in the article; or unless he becomes disqualified under the rules relating to defaulters.

If a brood mare engaged in a produce stake drop her foal before the 1st of January the nomination is void, and if she have a dead foal or be barren the nomination is void.

20. *Nominations not to be changed after Closing.*—No person who has once subscribed to a stake shall be allowed to withdraw his name, and no nomination shall be altered in any respect after the time of closing, without the consent of all the parties in the race; and in free handicaps an acceptance shall be considered a nomination. No post entries shall be allowed.

21. *Exception to preceding Rule.*—When a person takes a nomination for a stake in which the forfeit is to be declared by a particular time, and does not declare forfeit by the time fixed in the article, he shall thenceforth be considered to have taken the engagement on himself, and his name shall be substituted for that of the original subscriber.

22. *Use of Fictitious Names.*—Every

person who wishes to engage his horses in any other name than his own, must assume some one other name, which must be registered annually at Messrs. Weatherby's office: a fee of ten guineas must be paid at each time of registration, and he must run in that name only; and if the person registering is a member of the Jockey Club, the fee is 50 guineas. No person to change his assumed name once registered under a penalty of 10 sovs. A percentage on the sum so collected is to be paid to the Bentinck Benevolent Fund, and the remainder to the Racing Fund of the Jockey Club. The person registering the assumed name shall be considered in all respects as the owner of the horse entered in it, and in the event of the forfeit not being paid, his real name shall be published in the Forfeit List. No person shall register as an assumed name that of a person who runs his horses in his own name, or an assumed name previously adopted. Any horse running in any other name than that of his owner shall be disqualified, unless the name is registered as above. This rule not to prevent a person who has subscribed to a stake from giving his nomination, provided the real or registered name of the owner appear in the entry.

23. *Nominations not required to be made on Sunday.*—When the day fixed for the closing or naming for any stake, or for declaring forfeit or produce, shall fall on a Sunday, subscriptions, nominations, or declarations for such stake may be received on the following day, provided that there is an interval of one clear day between the day of closing, naming, or declaring, and the day of running.

In case the day fixed for naming for any stake, for which nominations are received by Messrs. Weatherby, shall fall during a Newmarket race week, nominations may be made to them there, whether so expressed in the advertisement of the stakes or not.

24. *Void by Death.*—All nominations are void by the death of the subscriber.

25. *Allowances to Produce of Untried Horses or Mares.*—In every sweepstakes in which there shall be an allowance of weight to the produce of untried horses or mares, it shall extend to horses or mares whose produce never won a registered prize in any country, but such allowance shall be claimed by the subscriber before the expiration of the time of naming; and if not so claimed, no allowance shall be made.

Respecting Stakes and Forfeits.

26. *Stakes to be paid before Starting.*—All stakes shall be made before starting, in cash, bank bills, or banker's notes, payable on demand, and be paid into the hands of the person appointed by the Stewards to receive the same; and in default thereof by any person, he shall pay the whole stake as a loser, whether his horse came in first or not, unless such person shall have previously obtained the consent of the party or parties with whom he is engaged to his not staking.

And Forfeits in certain Cases.—When any person has more than one nomination in a stake, he shall not be allowed to start any horse for it unless the forfeits be paid for every horse which does not start, belonging to him, or standing in his name, or in the same name as the horse which runs, as well as the stakes for those which do.

27. Entrances to plates, and to sweepstakes, where there is an entrance to go to the fund, are payable at the time of nomination; but if payment is not then insisted upon, they may be claimed afterwards under Rule 28, and published in the Forfeit List, like unpaid forfeits.

28. *Arrears of Owner and Namer to be paid before Starting.*—No person shall start a horse for any race, either in his own name or in that of any other person, unless both the owner and namer of such horse shall have paid all former stakes and forfeits. And this rule shall extend to forfeits due elsewhere than at the place of running, provided a notice of such forfeits being due shall have been published in the Forfeit List, or have been delivered to the Stakeholder or Clerk of the Course by ten o'clock in the evening preceding the day of running.

29. *Arrears due for a Horse to be paid before he can Start.*—No horse shall start for any race unless all former stakes and forfeits due for that horse shall be paid before starting, provided notice has been given as above.

30. *These Rules extend to Ireland.*—These rules, relative to arrears of stakes and forfeits, extend to forfeits due at

the Curragh and other established meetings in Ireland, as well as to forfeits due at meetings under the Grand National Steeplechase Rules.

31. No person convicted of any fraudulent practices on the turf, and no person that has been reported by the Committee of the Subscription Rooms at Newmarket or at Messrs. Tattersall's as being a defaulter in bets, shall be permitted to name, enter, or run, either in his own name or in that of any other person, any horse of which he is either wholly or in part owner for any race whatever.

The Jockey Club will not enforce the penalties imposed by this rule for default in bets made after July 8, 1868, unless the complaint shall have been lodged with the Committee of the Subscription Betting Rooms at Tattersall's or at Newmarket within three months of the bets being due.

THE FORFEIT LIST.

32. *To be published in Racing Calendar.*—A list of unpaid forfeits, with the name of the subscriber to the stake and the name or description of the horse, with the name or sufficient description of the stake, and the amount of the forfeit, shall be advertised in the Sheet Racing Calendar after the Newmarket July and Houghton Meetings every year. Forfeits once published in the Forfeit List must be paid direct to Messrs. Weatherby, and cannot be struck out till this is done.

33. *By whom Lists of Forfeits are to be sent for Publication.*—The person appointed to receive stakes is to send to Messrs. Weatherby a list of unpaid forfeits, as soon after the race as conveniently may be, in order that the same may be placed upon the Forfeit List; and if he shall omit to make such last-mentioned return within a reasonable time, it may be made by the respective winners of the races for which the forfeits are due. These returns in all cases to be made in writing, and signed by the parties making them.

34. *Persons appearing in Forfeit List not entitled to Enter.*—No person whose name shall appear in the published Forfeit List or Steeplechase Forfeit List shall be entitled to enter or run a horse for any plate, sweepstakes, or subscription, either in his own name or in the name of any other person, until he shall have paid up all the forfeits in respect of which his name appears in the list.

35. *Horses appearing in Forfeit List not qualified to be Entered.*—No horse which appears in the published Forfeit List or Steeplechase Forfeit List shall be qualified to be entered or to run for any race whatever until the forfeits mentioned in the said list as due for such horse shall have been paid; and should any such horse be discovered to have run and come in first, he shall be liable to be objected to at any time within six calendar months.

36. *Suspected Nominations may be struck out.*—In order to prevent persons who are defaulters from evading these laws, and continuing to engage horses by the use of fictitious names, the Stewards shall have the power of calling upon a nominator to produce satisfactory testimony that the horse named is not the property, either wholly or in part, of any person whose name appears in the advertised list of defaulters, and if the nominator shall fail to do so, the Stewards may cause the nomination to be erased.

37. *Liability for Engagements of Horses Sold.*—When a horse is sold with his engagements, or any part of them, the seller has not the power of striking the horse out of the engagements with which he is sold; but as the original subscriber remains liable to the respective winners for the amount of the forfeits in each of these engagements, he may, if compelled to pay them by the purchaser's default, place the forfeit on the Forfeit List in the usual manner, as due from the purchaser to himself; and until this forfeit is repaid, both the purchaser and the horse remain under the same disabilities as if the purchaser had been the original subscriber.

In all cases of sale by private treaty, the written acknowledgment of both parties that the horse was sold with the engagement is necessary to entitle either buyer or seller to the benefit of this rule; but when the horse is sold by public auction the advertised conditions of the sale are sufficient evidence, and if he has been claimed as the winner of a race of which it was a condition that the winner was to be sold with his engagements, this also is sufficient.

38. When a person has a horse engaged in the name of another person, and is entitled by purchase or otherwise to start the horse for such engage-

ment, but is prevented by any of the preceding laws from starting his horse without previously paying up forfeits to which he is not otherwise liable, he may, if he pays these forfeits, start his horse and have the forfeits, with the names of the horses for which they are due, placed on the Forfeit List in the usual manner as due to himself.

WEIGHING.

39. The name of every horse intended to start must be notified to the Clerk of the Scales, and his number be exhibited one quarter of an hour before the race, and if any alteration be made in the numbers after they have been exhibited, the Stewards may call upon the owner or trainer for an explanation. If this be not satisfactory, the owner, or trainer, or jockey, may be fined, at the discretion of the Stewards, in any sum not exceeding 50*l.*, and the horse shall not be allowed to start, nor the jockey to ride again, until the fine is paid.

40. *To Weigh before and after the Race.*—Jockeys are required to weigh at the usual place of weighing, before the race, under a penalty not exceeding 10*l.*, unless excused by the Stewards for some special reason, when the fact must be notified to the Clerk of the Scales; and every rider is, immediately after the race, to ride his horse to the usual place of weighing, then and there to alight and not before, and he is forbidden to touch anything beyond his own equipments after the race is over, until he has been weighed and passed by the Clerk of the Scales, under the penalty of disqualification, unless he can allege extraordinary circumstances, the legality of which must be decided by the Stewards. And if a jockey riding a beaten horse do not return to weigh, he shall be fined a sum of money not less than 10*l.* nor exceeding 25*l.*; and if it can be proved that the owner or trainer connived at this violation of the law, they shall be fined 25*l.* each, and the horse shall be disqualified to run in public until all the fines are paid.

If the jockey dismount before the proper time, or be short of weight, his horse is disqualified, unless he be disabled by an accident to himself or horse which should render him incapable of riding back, when he may walk or be carried to the scale.

It is optional for the jockey to weigh with his bridle, and the Clerk of the Scales will allow 1lb. for a curb or double bridle, but no weight is allowed for a snaffle-bridle unless it is put into the scale before the horse is led away, and no whip or substitute for a whip shall be allowed in the scales.

If a horse run in a hood it must be put into the scale, and included in the jockey's weight.

41. *Over-weight.*—Each jockey shall be allowed 2lb. above the weight specified for his horse to carry, and no more, unless a declaration has been made to the Clerk of the Scales of the extra weight the jockey is about to carry one half hour before the time fixed for the said race, and the extra weight shall be appended to the horse's number when it is put up. In default of such declaration the horse carrying more than 2lb. over his specified weight shall be placed as the last horse in the race, the jockey shall be fined 5*l.* for his neglect, and shall not be allowed to ride until the said fine be paid; and the weight each horse actually carried, if more than 2lb. above his weight, shall be published in the first list printed after the race, and also in the Racing Calendar.

42. *Raising Weights in Handicaps.*—In all handicaps, when the highest weight accepting is under 8st. 12lb., it is to be raised to that weight, and the others in proportion.

43. *No Horse to carry less than 5st. 7lb.*—No horse shall carry less than 5st. 7lb. for any race.

STARTING.

44. *Horses going to the Post to be considered Starters.*—When the riders of the horses, brought out to run for any race, are called upon by the person appointed to start them to take their places for that purpose, every horse which comes up to the post shall be liable to his whole stake.

45. *Power of the Starter.*—The starter has authority to order the jockeys to draw up in a line as far behind the starting-post as he may think necessary, and any jockey disobeying the orders of the starter, or taking any unfair advantage, shall be punished by fine or suspension, according to the nature and degree of his offence, at the discretion of the Stewards.

No jockey can be suspended beyond the meeting at which the offence is com-

mitted unless the case has been heard by the three Stewards of the Jockey Club, and in the absence of any of the Stewards a member or members of the Jockey Club shall be deputed to act for the Steward or Stewards absent.

The punishment inflicted shall not be declared till after the last race of the day on which it is awarded.

A sentence duly passed upon a jockey cannot be remitted by the Stewards without the authority of a general meeting of the Jockey Club.

The starter is prohibited from making a running start—the horses must walk up, and be started from a walk; and if the starter from negligence or inattention allows a start to take place on the wrong side of the Starting-post, he shall be fined a sum of money not exceeding 50*l.*, and the start shall be declared null and void.

46. *Foul Riding.*—If in running for any race one horse shall jostle or cross another, such horse is disqualified for winning the race, whether such jostle or cross happened by the swerving of the horse, or by the foul and careless riding of the jockey or otherwise; and where one horse crosses the track of another, it is deemed a disqualification, unless he be two clear lengths or more before the horse whose track he crosses. And if such cross or jostle shall be proved to have happened through the foul riding of the jockey, he shall be subject to such punishment as the Stewards may think fit to inflict.

47. Horses running on the wrong side of a post and not turning back are disqualified.

SECOND HORSE.

48. *Money for Second Horse.*—When it is a condition of a stake or plate that the owner of the second horse shall receive a certain sum of money out of the stakes, or out of the plate, and the race is walked over for, or no second horse is placed, the winning horse is entitled to the whole prize. If the money advertised to be given to the second horse is a separate donation from the race-fund or other source, and the race is walked over for, or no second horse is placed, the money is not given at all.

When the entrance-money for a plate is advertised to be given to the owner of the second horse, and the plate is walked over for, or no second horse is placed, the entrance-money is to be returned.

DEAD HEATS.

49. *When to be run over again.*—If for any plate or sweepstakes, not to be run in heats, the first two or more horses shall come in so near together that the Judge shall not be able to decide which won, those horses shall run for such prize over again, after the last race on the same day; the other horses which started are deemed losers, and are entitled to their respective places as if the race had been finally determined the first time.

50. *Effect of Dividing after a Dead Heat.*—When horses run a dead heat for a sweepstakes or plate, and the parties agree to divide the stakes, such horses shall be liable to carry extra weight as winners of that race, and if there be any money for the second horse they divide that also.

51. *Dead Heat for Second Place.*—When horses run a dead heat for the second place they divide any money that may be payable to the second horse, and if there is any money for the third, they divide that also; and if any of these horses run for a race in which there is an allowance for horses that have not received a certain sum for being second, they shall be considered as having received only the amount of their respective shares.

When a dead heat is declared for the second place in any race, and the winner is disqualified too late for the race to be run again on the same day, the horses that ran the dead heat shall divide the race without either of them being called upon to walk over, and if any horse was placed fourth he shall receive any money there may have been for the third.

HEATS.

52. When a race is run in heats, a horse, to win the prize, must be the actual winner of two heats, unless no horse appear against him, when one walk over is sufficient.

53. In running of heats, if it cannot be decided which horse is first, the heat goes for nothing, and they may all start again, except it be between two horses that had each won a heat.

54. When two horses have each won a heat, they only must start for a third, and the preference between them will be determined by it.

55. When a plate is won by two

heats the preference of the horses is determined by the places they get in the second heat.

56. Horses drawn before the plate is won are distanced.

57. No distance in the third heat.

58. No person shall start more than one horse of which he is the owner, either wholly or in part, and either in his own name or that of any other person, for any race for which heats are run.

SELLING RACES.

59. *How the Winner is to be Claimed.*—When it is made a condition of any plate or sweepstakes that the winner shall be sold for any given sum, the owner of the second horse being first entitled, &c., no other person than one who ran a horse in the race shall be entitled to claim. The claim must be made to the Judge, the Clerk of the Scales, the Clerk of the Course, or one of the Stewards present, within a quarter of an hour after the race. The horse claimed shall not be delivered till he is paid for; and he must be paid for by ten o'clock at night on the day of the race, otherwise the party claiming shall not be entitled to demand the horse at any future period; but, nevertheless, the owner of the winning horse may insist upon the claimant taking and paying for the horse claimed; but if the horse should subsequently be disqualified, the claimant or purchaser shall have the option of keeping it at the price of a beaten horse, or returning it immediately.

60. *Sales by Auction.*—When it is a condition of a selling race that the winner shall be put up to auction after the race, the horse shall not leave the place of sale until the auctioneer is satisfied as to the purchase money; and if he is not satisfied within a quarter of an hour, he shall have the power of putting the horse up to auction again. The half of any surplus which may thereby be obtained over and above the price for which the horse was entered to be sold, shall be paid to the owner of the second horse, and this shall not invalidate the privilege of the second horse as to the prior claim of any beaten horse under Rule 61. If at any country meeting the winner of a selling race shall by the terms prescribed be sold by auction, and the moiety of the surplus be not paid to the owner of the second horse, the said winner shall be disqualified for being entered, or for running in any race where the Newmarket rules of racing are in force.

61. *Claim of Beaten Horses.*—Any horse running for a selling stake or plate is liable to be claimed by the owner of any other horse in the race for the price for which he is entered to be sold and the amount of the stake—the owner of the second horse to be first entitled to claim, and the others in the order in which their horses are placed, and the winner to have the last claim.

62. No person can claim more than one horse in the same race.

63. If two or more persons equally entitled wish to claim, they shall draw lots for the priority.

EXTRA WEIGHTS AND ALLOWANCES.

64. When it is a condition of any race that horses should carry extra weight for winning a certain number of prizes during the year, such winnings shall date from the 1st of January preceding, shall extend to the time of starting, unless otherwise specified, and shall apply to all established races in any country.

No penalty shall be inflicted for running second in any race, save and except that horses which have received 100 sovs. for being placed may be debarred, by the conditions of any particular race, from receiving maiden allowances. No allowance shall be made for having been beaten.

When any race is in dispute both the horse that came in first and any horse claiming the race shall be liable to all the penalties attaching to the winner of that race till the matter is decided.

65. *Not Accumulative.*—Extra weights and allowances are not accumulative, unless so specified in the conditions.

66. *Do not apply to Matches, Hurdle-races, or Private Handicaps.*—Horses do not carry extra weight for winning a match, and are not entitled to allowance for having been beaten in a match.

The winner of a private handicap race shall be exempted from the penalty of carrying extra weights in all public handicaps the terms of which impose on winners of handicaps certain penalties for winning after a specified date.

Note.—By a private handicap is meant one in which the weights are

agreed upon among the parties to it, and which has not been publicly advertised previous to the engagement being made.

Winners of hurdle-races are not considered winners in flat racing.

67. A horse walking over or receiving forfeit, except for a match, is deemed a winner.

68. *Value of Prizes, how calculated.*—In estimating the value of any prize no deduction shall be made, except of the winner's own stake and of any sum or sums required by the conditions to be paid out of the stakes to the owners of any other horse or horses in the race—the entrance for a plate not to be deducted. And every prize, not in specie, shall be estimated at its advertised value in sovereigns, and if such value is not designated it shall be taken at the cost price.

OBJECTIONS TO QUALIFICATION.

69. *Examination of Mouth.*—When the age or qualification of a horse is objected to, either before or after running for any race, the Stewards, or those whom they may appoint, shall have power to order an examination of the horse's mouth by competent persons, and to call for all such evidence as they may require, and their decision shall be final, unless they shall sanction the removal of the question in dispute into a Court of Law.

Any person requiring a horse's mouth to be examined must pay the expense of such examination, unless the horse is proved to be of the wrong age, in which case such expense shall be paid by the owner of the said horse.

70. *When Complaints be made.*—All complaints of foul riding, or of horses not running the proper course, or of any other irregularities occurring in the race, must be made either by the owner, jockey, or groom of the horse, to one of the Stewards, to the Judge of the race, to the Clerk of the Course, or the Clerk of the Scales, within a quarter of an hour after the race.

As it is expedient that there should be a statute of limitations with respect to the time of lodging objections against winning horses, no complaints can be entertained after the conclusion of the race meeting, save and except charges of fraudulent entry or of running horses under a false description, which may be investigated at any period within one year from the date of the offence.

71. *Objections to Qualification, when to be made.*—When the qualification of any horse is objected to by ten o'clock in the morning of the day of starting, the owner must produce a certificate, or other proper document, to the Steward or Clerk of the Course, or to the Keeper of the Match-Book if the case happen at Newmarket, before the race is run, to prove the qualification of the horse; and if he shall start his horse without so doing, the prize shall be withheld for a period to be fixed upon by the Stewards, at the expiration of which time, if the qualification be not proved to the satisfaction of the Stewards, he shall not be entitled to the prize, though his horse shall have come in first, but it shall be given to the owner of the second horse. When the qualification of a horse is objected to after that time, the person making the objection must prove the disqualification.

72. *Presents to Judge, Starter, or Handicapper not allowed.*—If it can be proved against any person that he has offered money before or after a race to any Judge, Starter, or Handicapper, or promised any part of the stake or prize, or any share or part of a bet, he shall be warned off the Course at Newmarket, and other places where these rules are in force; and any Judge, Starter, or Handicapper who shall, before or after a race, demand or receive money of any person, shall be warned off the Course at Newmarket, and other places where these rules are in force.

73. The Judge and the Starter cannot employ substitutes without the consent of the Stewards, or their substitutes. A contested race cannot be decided if the Judge have vacated his box, unless a Steward, or an official person duly authorized, occupy it. A stranger cannot start the horses without the consent of the Stewards or their substitutes: in the event of a violation of this rule, the heat is nullified, and the race must be run over again without going to the scales.

74. Neither the programme nor the result of any flat race meeting in Great Britain shall be published in the Official Racing Calendar, unless the said meeting is advertised to be subject to the

established rules of racing as settled by the Jockey Club.

Any horse running for a flat race on any course where the programme is not previously published in the Official Calendar shall be disqualified from entering or running at any meeting where the established rules of racing are in force.

75. If any person shall be detected watching a trial, or shall be proved to the satisfaction of the Stewards of the Jockey Club to have employed any person to watch a trial, or to have obtained surreptitiously information respecting a trial from any person or persons engaged in it, or in the service of the trainer of the horses tried, he shall be deemed to have been guilty of a corrupt practice on the Turf, and shall be warned off Newmarket Heath, and all race courses where the Newmarket Rules are in force.

76. *New Rules.*—No new Rule of Racing can be passed, nor any existing rule be rescinded or altered, without being previously advertised three times in the Sheet Racing Calendar, and notice given of the meeting of the Jockey Club at which it is to be proposed. Any owner of racehorses, or person affected by such new rule or alteration, may petition the Jockey Club through the Secretary; all such petitions to be read at the meeting before the question is put.

SECT. 2.—QUEEN'S PLATE ARTICLES.

I. Every horse, mare, or gelding that runneth for any of the said Plates shall carry the weight appointed in the Schedule hereunto annexed.

II. Every person that putteth in a horse, mare, or gelding, for any of the said Plates, shall enter the same with the name of the owner, and the age, name, pedigree, or sufficient description of the horse, according to the Rule of the Jockey Club regarding nominations, at the time and place appointed by the Steward or Stewards of the Races at which such Plate is to be run for. The charge for such entry shall not exceed five shillings, and no further charge shall be made on the winner of the Plate.

III. Horses that run for any of Her Majesty's Plates shall start at the time appointed by the Steward or Stewards of the Races at which such Plate is run for.

IV. Each horse's, mare's, or gelding's place, as he or they come by the ending-post, shall be determined by the Judge appointed by the Steward or Stewards of the Races at the place where the said Plate is run for.

V. Every rider shall, immediately after the race is run, be obliged to come to the usual place of weighing, with his horse, mare, or gelding, then and there to alight, and not before, and there to weigh to the satisfaction of the person appointed for that purpose.

VI. And in case of neglect or refusal thereof, such owners and riders shall immediately be declared incapable of running or riding any more for this or any of Her Majesty's Plates hereafter.

VII. No horse, mare, or gelding that runneth on the wrong side of the post or flags shall have anyclaim to the said Plates.

VIII. None of Her Majesty's Plates to be run for in heats.

IX. When the age or qualification of a horse entered for any of Her Majesty's Plates shall be objected to, either before or after running, the Stewards of the Races at which such Plate is run for shall have the power to order an examination of the horse's mouth by competent persons, and to call for all such evidence as they may require; and their decision to be final, unless they shall think fit to refer the matter to the Stewards of the Jockey Club for the time being, in which case the decision of the said Stewards of the Jockey Club shall be final. A certificate shall not be granted to any horse objected to until the question of his qualification shall be decided in the manner herein prescribed.

X. Her Majesty's Plates to be run for between the 25th of March and the week which includes the 22nd of November, both inclusive, in each year.

XI. The distance shall not be less than two miles, and the weights, regulated according to the months in which the races are run, are to be according to the subjoined Schedule.

XII. And in case any difference shall arise in running, or respecting any matters not hereinbefore provided for, or as to the interpretation of these Her Majesty's orders, the same shall be determined by the Master of the Horse, or by such person or persons as he shall appoint.

N.B. The Plate run for alternately at York and Richmond is for mares only.

SCHEDULE OF WEIGHTS FOR HER MAJESTY'S PLATES.

Age.	March and April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
TWO MILES AND LESS THAN TWO MILES AND A QUARTER.								
	st. lb.	st. lb.	st. lb.	st. lb.	st. lb.	st. lb.	st. lb.	st. lb.
Three yrs.	7 9	7 11	8 0	8 3	8 5	8 7	8 8	8 9
Four yrs.	9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7
Five yrs.	10 1	10 0	9 13	9 12	9 12	9 12	9 11	9 11
Six and aged	10 2	10 2	10 0	9 13	9 12	9 12	9 11	9 11
TWO MILES AND A QUARTER AND LESS THAN THREE MILES.								
Three yrs.	7 8	7 9	7 10	7 13	8 1	8 3	8 5	8 5
Four yrs.	9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7
Five yrs.	10 1	10 1	10 0	10 0	9 13	9 13	9 12	9 12
Six and aged	10 4	10 3	10 2	10 1	10 0	10 0	9 13	9 12
THREE MILES AND LESS THAN THREE MILES AND A HALF.								
Three yrs.	7 7	7 8	7 11	8 0	8 2	8 4	8 6	8 6
Four yrs.	9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7
Five yrs.	10 2	10 2	10 1	10 1	10 0	10 0	9 13	9 13
Six and aged	10 5	10 4	10 3	10 2	10 1	10 1	10 0	9 13
THREE MILES AND A HALF AND UPWARDS.								
Three yrs.	7 3	7 4	7 6	7 9	7 11	7 13	8 1	8 2
Four yrs.	9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7
Five yrs.	10 4	10 4	10 3	10 2	10 2	10 1	10 0	10 0
Six and aged	10 8	10 7	10 6	10 5	10 4	10 3	10 2	10 1

SECT. 3.—PRINCIPLES OF BETTING.

BETTING is undoubtedly a species of gambling, and it is now carried to an excess in all classes of society. Some notice, however, should here be taken of its principles, for it is of no use to attempt to ignore its existence. There are two modes of laying out money upon races. In one the individual backs his judgment, or the information which he has received founded upon that of others: this is called "backing horses." The other requires no knowledge of horses whatever, and is founded upon calculations which would inevitably lead to a winning result in the long run, if bets won upon paper, and bets paid, were synonymous terms; but while defaulters are constantly making their disappearance, and while other losers are slow in their payments, though perhaps finally solvent, this system will often lead even the most scientific bettor into trouble.

BACKING HORSES in principle is simple enough, but in practice it requires the bettor to know the secrets of the stable; and here he is constantly led into error. Many are the "good things" into which unsuspecting *friends* are led; and on making a remonstrance they are perhaps told that "it is of no use nowadays to attempt to take in your enemy, and therefore your friends must suffer." Unless, therefore, a backer is connected with an influential stable or has some extraordinary means of gaining information, in the long-run he is sure to be the sufferer; hence few backers of horses, except on the above terms, long continue the speculation. A few hits may be made, and perhaps some thousands pocketed, on a particular Derby or St. Leger; but they are soon returned to the place from whence they came, and generally with very liberal interest.

MAKING A BOOK.—"Betting round" and "laying the odds" are very nearly synonymous terms with "fielding," though it does not always happen that the person laying the odds makes a book. Sometimes such a thing occurs as a party laying them against a horse which is not "meant," or which is dead amiss, yet in the P.P. (play or pay) races he will receive his bet. The principle of making a book is to lay out a fixed sum against every horse in the race, or as many as possible; and should the bettor "get round," as it is termed—that is, lay against enough to more than balance the odds laid—he is sure of winning (on paper). In this mode of betting the great point is that an outsider shall win; the favourite *at the time of making the book* being the worst horse in the race, though from having only lately become a favourite he may be one of the best. Thus, supposing the bettor to make what is called a hundred-pound book—that is, to lay 100*l.* against every horse, at the current odds—he will take care not to lay more odds against any horse than the figure

which represents half the number likely to be engaged; or, supposing there are 20 horses, 10 to 1. The reason of this is, that there are seldom more than half the horses backed, and consequently the bettor will not be able to get round with the whole number; but assuming one-half as the probable proportion, he will be tolerably safe; and if he can get more he will be all the more lucky. The following table shows the current odds in the week preceding the Derby of 1855, which was a bad betting race, from various causes. (The odd pence are omitted in this and subsequent calculations).

Derby Betting, May 17.		Made into a £1000 Book.		
Wild Dayrell	5 to 1	£1000	to	£200 0
De Clare	6 ,, 1	1000	,,	166 10
Lord of the Isles	6 ,, 1	1000	,,	166 10
Rifleman	6 ,, 1	1000	,,	166 10
Flatterer	12 ,, 1	1000	,,	83 5
Kingstown	14 ,, 1	1000	,,	71 10
Dirk Hatterick	25 ,, 1	1000	,,	40 0
Oulstone	25 ,, 1	1000	,,	40 0
St. Hubert	30 ,, 1	1000	,,	33 5
Rylstone	30 ,, 1	1000	,,	33 5
Bonnie Morn	50 ,, 1	1000	,,	20 0
Græculus Esur.	50 ,, 1	1000	,,	20 0
Strood	100 ,, 1	1000	,,	10 0
Benhams	100 ,, 1	1000	,,	10 0
Vexation Colt	100 ,, 1	1000	,,	10 0
Rotherham	100 ,, 1	1000	,,	10 0
Noisy	100 ,, 1	1000	,,	10 0
				£1090 15

It will thus appear that at the date of the above table it was impossible for a person going fresh into the ring to make a safe book, because the total receipts of the heavier book at the current odds would only amount to 1090*l.* 15*s.*, from which would have to be deducted the stake of some one horse (which this year happened to be the most unprofitable), and also 1000*l.* The bookmaker, therefore, would have lost 109*l.* 5*s.*; but, as he would most probably have laid against 20 other horses during the year, at the average of 50 to 1, or 1000*l.* to 20*l.*, he would have to receive 400*l.* less 109*l.* 5*s.* which, with the chances of defaulters, &c., would be a poor remuneration for time and expenses. Still, even in such a year as 1855, *on paper* such a book is a certain win, and it is only by bad debts that a careful man can ever be made to lose at this game. The left-hand column shows that it does not answer to lay the varying odds to the same amount, since on this plan the layer *may* have to pay 100*l.* and would only receive 16*l.* In the year 1855 he would have risked this sum and won 11*l.*, being the difference between 5*l.*, the sum to be paid for Wild Dayrell winning, and 16*l.* the various stakes gathered from the 16 losers; besides, of course, other pounds received from other horses laid against during the year. If, therefore, the bettor's object is to lay these small sums, he must be careful still to make his book on the same principle as the 1000*l.* book here given; that is, he must always keep the long odds at the same amount and vary the short ones accordingly.

Such is the principle on which bookmaking is conducted, and it requires no knowledge of horses, and only a certain quickness of calculation; but it is variously carried out in practice, some playing the safe game, and being contented with laying only 1000*l.* against each horse as he comes into the betting, whilst others make their book full, and then commence a fresh one; and as they find they are certain of money in hand, they invest it by laying twice over against horses which they fancy have no chance. The principle, however, is always the same, never to lay out money except with a certainty of receiving more from the whole of the losers than is to be paid to the one winner.

The most remarkable year in modern times of extremely good and bad books is that of The Hermit (1867). Steady bookmakers who confined themselves to certain profits, could and did make good books by beginning early and continuing their operations even up to the week before the race, when about 25 horses were backed at prices varying from 2 to 1 to 1000 to 5; but at the same time "plungers" (including two well known examples in the Peerage), overlaid their books to a ruinous extent by either backing the favourite or laying against a horse (the winner) thought to have no chance from having broken a blood-vessel. To understand the nature of the case, the tyro has only to examine the list of quotations, which, besides those here named, contained seven or eight others at 200 to 1.

Derby Betting, May 13, 1867.		Made into a £1000 Book.		
Vauban	2 to 1	£1000	to	£500 0
The Rake	3 ,, 1	1000	,,	333 6
Dragon	15 ,, 1	1000	,,	66 13
The Hermit	20 ,, 1	1000	,,	50 0
Marksman	20 ,, 1	1000	,,	50 0
The Palmer	20 ,, 1	1000	,,	50 0
Julius	20 ,, 1	1000	,,	50 0
D'Estournel	25 ,, 1	1000	,,	40 0

Derby Betting, May 13, 1867.	
Grand Cross	28 to 1
Van Amburg	40 „ 1
Fitz-Ivan	40 „ 1
Roquefort	100 „ 1
Trocadero	100 „ 1
Taraban	100 „ 1
Capt. Kidd	100 „ 1
Thornapple	100 „ 1
Corporal	100 „ 0½

Made into a £1000 Book.		
£1000	„	£35 14
1000	„	25 0
1000	„	25 0
1000	„	10 0
1000	„	10 0
1000	„	10 0
1000	„	10 0
1000	„	10 0
1000	„	5 0
		£1280 13

In February Vauban was at 100 to 3; The Rake at from 9 to 13 to 1; Dragon at 100 to 4; The Hermit at 100 to 6; Marksman at 100 to 4; and D'Estournel, first favourite, at 100 to 12. Consequently, even without hedging, the list would stand as follows, by commencing the book in February and keeping it open to the last:—

Vauban	£1000	to	£30 0
The Rake	1000	„	95 0
Dragon	1000	„	40 0
The Hermit	1000	„	60 0
Marksman	1000	„	40 0
The Palmer	1000	„	50 0
Julius	1000	„	50 0
D'Estournel	1000	„	120 0
Grand Cross	1000	„	85 14
Van Amburg	1000	„	25 0
Fitz-Ivan	1000	„	25 0
Roquefort	1000	„	10 0
Trocadero	1000	„	10 0
Taraban	1000	„	10 0
Capt. Kidd	1000	„	10 0
Thornapple	1000	„	10 0
The Corporal	1000	„	5 0
			£625 14
Adding twenty other horses at 50 to 1, as before			400 0
			£1025 14

On the Monday before the race, the two favourites, Vauban and The Rake, would suit the bookmaker very well, because he would in the first case receive 1280*l.* 13*s.* to pay 1000*l.*, and in the second 1025*l.* 14*s.* to pay that sum. The mischief done was owing to the supposed certain success of Vauban, and the equally assured defeat of The Hermit, who at one time went a-begging at 100 to 1, and hence the enormous sums won and lost on each of these horses.

Hedging.—But besides this plain principle of bookmaking there is another called "hedging," which is the result of good information in connection with a stable. Thus, the bettor having been told that A is a horse likely to improve, takes 1000*l.* to 20*l.* in the autumn, and perhaps does this with two other horses on information received from various sources. In process of time, and shortly before the race comes off, one of them is gone out of the betting from accident, and must be written off as a loss of 20*l.* against A; B is at 5 to 1, whilst C is at 2 to 1. Now then he proceeds as follows: he lays 5 to 1 against B to 500*l.*, and 2 to 1 against C to the same amount; and he would then on the whole transaction stand as follows:—

A will be a certain loss of 20*l.*

If B wins, he will receive 1000*l.* and pay 500*l.*—balance in favour, 500*l.*

If B loses, he will receive 100*l.*, and pay 20*l.*—balance in favour, 80*l.*

If C wins, he will receive 1000*l.* and pay 500*l.*—balance in favour 500*l.*

If C loses, he will receive 250*l.* and pay 20*l.*—balance in favour, 230*l.*; so that altogether his winnings will be very considerable, provided that his information leads to good results in two cases out of three, which it may be supposed to do.

At present nothing but the death of the nominator before the race upsets the first of these calculations, or the death or injury of the colt before hedging. The late Sir Joseph Hawley, however, proposed a new rule, by which all bettors must have a start for their money; and had it been carried, these books would have required to be entirely remodelled. No one could then have made *a certain* book, because he would never know what bets would stand and what would be off, in consequence of horses not starting. But, at the same time, such an amount of demoralization would be prevented as might well justify the passing of so stringent a measure.

Sect. 4.—Rules of Betting.

1. In all bets there must be a possibility to win when the bet is made; "you cannot win when you cannot lose."

2. The interests of the bet are inseparable with the interest of the stakes, except when the winning horse is disqualified owing to a default in making stakes; or if an objection be made to the qualification of a horse on the ground of incorrect pedigree or nomination, *after the race is run*, the bets shall go to the horse that comes in first, provided he is of the right age, and that in other respects he has not transgressed the Rules of Racing; but if the owner of a horse, or a person

on his behalf, succeed by fraud or by false statements in starting him for a race for which he is legally disqualified, making himself liable to the penalties in Rule 18, Laws of Racing, the bets will go with the stakes, whether any objection be made either before or after the race.

3. All double bets must be considered "play or pay."

4. Confirmed bets cannot be "off" except by mutual consent, or by incidents hereafter mentioned, viz. Firstly: Either of the bettors may demand stakes to be made fourteen days before the race is run upon proving to the Committee of the Rooms that he has just cause for so doing. *If ordered*, the bets must be covered on the comparing day, or sufficient security offered, and a person refusing to cover shall be expelled the Subscription Rooms at Tattersall's and Newmarket. Secondly: If a bettor be absent on the day of running, and there is a just cause to presume that he intends to evade his engagements, a public declaration of the bet must be made in the Ring, a copy of which is to be posted up at the usual place one hour before the race is apppointed to be run, and, in the event of no person of known respectability becoming responsible for the same, a written notice must be given to the Clerk of the Course, or to the Clerk of the Stakes, before the race is run, declaring the bet void.

5. All bets on matches and private sweepstakes depending between any two horses shall be void if those horses become the property of the same person, or of his avowed confederate, subsequently to the bets being made.

6. All bets between particular horses shall be void if neither of them win, unless agreed by the parties to the contrary.

7. If any bet shall be made from signal or indication after the race has been determined, such bet shall be considered fraudulent and void.

8. The person who lays the odds has a right to choose a horse or the field; when a person has chosen a horse, the field is what starts against him.

9. If odds are laid without mentioning the horse before the race is over, the bet must be determined by the state of the odds at the time of making it.

10. If a match or sweepstakes be made for any particular day in any race week, and the parties agree to change the day to any other in the same week, all bets must stand; but if the parties agree to run the race in a different week, or to make the slightest difference in the terms of the engagement, all bets made before the alteration are void.

11. Bets made on horses winning any number of races within the year shall be understood as meaning between the 1st of January and the 31st of December.

12. If a bet is made between two horses in a match or sweepstakes with a forfeit affixed, say 100*l.* h. ft., and both horses start, either party may declare forfeit, and the person making such a declaration would pay 50*l.* if the other horse won but would receive nothing in the event of his horse winning the race.

13. Bets are determined though the horse does not start when the words "absolutely run or pay," or "play or pay," are made use of in betting.

14. Money given to have a bet laid shall not be returned, though the race be not run.

15. When the riders of any horses brought out to run for any race are called upon by the Starter to take their places, all bets respecting such horses shall be "play or pay."

16. When horses run a dead heat for a plate or sweepstakes, and the owners agree to divide, all bets between such horses, or between either of them and the field, must be settled by the money betted being put together and divided between the parties in the *same proportion* as the stakes. If a bet is made on one of the horses that ran the dead heat against a beaten horse, he who backed the horse that ran the dead heat wins half his bet if his horse received half the prize; if the dead heat be the first event of a double bet, the bet is void unless one horse received above a moiety, which would constitute him a winner in a double event.

17. The following races shall be considered "play or pay:" The Derby and Oaks at Epsom; the St. Leger at Doncaster; the Two Thousand Guineas, the One Thousand Guineas, the Cesarewitch and Cambridgeshire, at Newmarket; the Ascot, Goodwood, and Doncaster Cups; and all handicaps

above 200*l.* value with two forfeits, the minor of which shall not be less than 5*l.* And the Committee of Tattersall's and of the Subscription Room at Newmarket will take no cognizance of any disputes respecting "play or pay" bets on any other races, or of any bets made upon handicap races before the weights for such races are published.

18. If a declared defaulter does not satisfy the claims of his creditors within twelve months, he shall not be entitled to receive any debts which may be due to him for the race for which he was in default; but if his debts are paid within the prescribed time, viz. "one year," *i.e.*, 365 days inclusive of the day when the money was won, the Committee will support his just claims to receive payment from his debtors.

19. The Stewards of races have no authority *ex officio* to take cognizance of any disputes or claims with respect to bets.

CHAPTER XIV.

RACE-MEETINGS.

Sect. 1.—The Committee and Officials.

A Race Committee is generally formed in every instance in which public races are intended to take place; and they meet at certain times, conducting their business in the ordinary way, with a chairman and secretary. By them the officials are elected, and the stakes and admission-money to the stand, &c., fixed upon. The officials are the stewards, the secretary, clerk of the course and his men, weigher, judge, handicapper, and starter.

The Stewards are generally noblemen or gentlemen of high standing; and they should, if possible, have some knowledge of the proceedings of the turf, since it often happens that they have to decide upon disputed points. They should be careful, for their own security, to ascertain that there are sufficient funds to cover the various prizes advertised in the shape of additions to handicaps, plates, &c., as they are responsible for the amounts.

The Secretary is generally the most important person of the whole, being usually the party to obtain subscriptions to the funds, and very often also to the stakes. He should be an active man, of good business habits, and capable of keeping a register of the proceedings of the Committee.

The Clerk of the Course receives the subscriptions to the stakes, collects the amounts of the plates, &c., before starting; pays the amounts over to the winners, keeps the course in order, both before and during the races, by means of his subordinates; causes the bell for saddling, &c., to be rung, and generally arranges all matters connected with the course. In all sweepstakes closing on a certain day which may fail in obtaining the stated number of subscribers, the original subscribers cannot be kept to their engagements if the stake is re-opened. After the terms of a sweepstakes are published, and a single name has been subscribed, no alteration can be made in the conditions without his consent, and that of all others who have appended their names. A subscriber may alter his nomination for a sweepstakes before it closes, but not for a plate. The clerk of the course cannot be too particular in compelling all parties to adhere to the conditions of the various races; and he should also clearly specify the exact weights carried by every horse in making his return to the official registrar. He has, usually, the power of appointing his own subordinates.

The Judge is placed in the box set apart for him at the winning-post, and it is his duty to return the colour of the rider of the first and second horse in each race, with that of as many more as he can. He is provided with a list of the horses weighed, and the colours of their riders. His decision is final.

The Starter is generally on foot, and he is now allowed an assistant, besides a flagman, whose duty it is to stand with a flag flying about a furlong before the starting-place, and drop it

on a signal from the starter, which shows all the riders that it is a fair start. If, therefore, this flag is flying as they pass him, they must pull up and start afresh. If there is a very large field of horses, and they are young and likely to be awkward, he should marshal them at a hundred yards from the starting-post, and walk down with them to a level with it, when he may give the word with a good chance of a fair and level start. If any jockey is evidently and wilfully the cause of a false start, the starter reports the same to the stewards, who have power to fine him. When the course is a small and narrow one, as at Chester, it is usual for the jockeys to draw lots for places before starting. The decision of the starter is final, and his testimony against a jockey should always be received and acted upon.

The Handicapper is sometimes an amateur of some experience, and at others a paid official, who undertakes the duty, and affixes the weights to the list of horses furnished to him. In either case the office is an onerous one, and generally leads to abuse from discontented parties who have failed to throw dust in his eyes, and who are, for attempting to do it, often punished by an extra weight, and perhaps *sometimes, but very rarely*, the innocent are sufferers. There is a prevailing objection to high weights in handicaps, not so much because it is unfair to the horses carrying the top weights, as because it tries their legs more than their owners like. According to arithmetical progression, 12 to 11 is a less proportion of odds than 9 to 8; but it is the last pound which breaks the camel's back; and though the latter weight may be carried without risk, yet the former is always likely to cause a break-down when the muscles become tired, or to do other damage. The objection, therefore, is a reasonable one as regards the future welfare of the horses, though not always founded upon correct reasoning in reference to the particular race. No one would, if he could help it, ever gallop his horse, on hard ground especially, with more than six or seven stone on his back; and, therefore, it is not to be wondered at that light-weighted handicaps are preferred. The handicapper, however, has nothing to do with the top weight, which is usually fixed by the committee; and he then allots all the other their weights, according to his view of their powers, judging as far as he can from what he has seen of their running, and from the recorded results of races in which they were engaged out of his sight. To do this, he ought to be present at as many races as possible, and should be able to judge when horses are "pulled," and when they are really meant to win; also, whether they are running in form, or whether they are only half-prepared; these several requisites are not often combined with perfect honesty and freedom from prejudice, and if they were they would still be open to be imposed upon, for no one can possibly be prepared for all the artifices which designing men may and do continually practise.

The Weigher is appointed to see that each jockey carries his appointed weight. He is always ready at the scales before the race, in order that the jockeys may be weighed before starting, and afterwards he must be there to weigh them again. A book is appointed to be kept in which each weight is registered.

Sect. 2.—Lengths of Courses.

[1760 yards are a mile, 240 yards a distance, and 220 yards a furlong.]

Abergavenny—One mile round, flat, except a very gradual ascent and descent half way round, with a good run in. T.Y.C. rather more than 5 furlongs.

Abingdon—Oval, perfectly flat, and $1\frac{1}{4}$ miles in length. T.Y.C. about 6 furlongs, starting from the Rifle Butts.

Airdrie—An oval of nearly a mile, with about 300 yards of a straight run home. There is a slight fall along the west side, and a rise along the east immediately before the run home.

Alexandra Park—A pear-shaped course, rather more than a mile and a furlong in extent. The T.Y.C. is about half a mile, and straight.

Ascot Heath—A circular course, short of 2 miles by 66 yards; the first half nearly is on the descent, and the last half, which is called the Old Mile, is up hill the greater part of the way. The Swinley Course is the last $1\frac{1}{2}$ miles of the above. The New Course is 1 mile 5 furlongs. The New Mile is straight, and up hill all the way. The T.Y.C. is the last 5 furlongs 136

yards of the New Mile. The Queen's Plate Course is rather less than 3 miles, starting at the New Mile starting-post, and running once round and in.

AYR—An oval of 1 mile 198 yards, with a straight run in of a quarter of a mile. The course is generally flat, with a slight hill at the back, and a descent to the last turn.

BATH—Is nearly an oval of 1½ miles, with a straight run in. T.Y.C. a straight half-mile.

BEDFORD—Is a circular course, with nearly a quarter of a mile straight run in; it is 1½ miles 46 yards, a dead flat, and good turf. The T.Y.C. is the last half mile. Queen's Plate Course, 3 miles.

BEVERLEY—Is an egg-shaped course of 1 mile 3 furlongs 90 yards, with a straight run in of nearly half a mile, and a gradual rise for the last quarter of a mile. Kingston Course, about 6 furlongs, nearly straight. T.Y.C. 4 furlongs 105½ yards.

BRIGHTON—The Old Course, on which the Cup is run, forms a figure like three sides of a square, and is 1 mile 6 furlongs 265 yards in length; the first quarter of a mile is level, with a slight dip at the end of it; the next half mile is on the ascent, and from the mile-post a descent until about one-third of a mile from the finish, where there is a sharp hill up to the winning-post. The New Course is 1 mile 6 furlongs 144 yards, starting from the winning-chair. The T.Y.C. 6 furlongs. New Ovingdean Course, about 6 furlongs. Bevendean Course, about 5 furlongs.

BRISTOL—Is 1¾ miles in circumference. Starting from the Stand, the course rises slightly round the bend to the right, then falls for about 3 furlongs, again rising to the 7-furlongs post, from whence it is flat till the straight course is reached, when there is a slight ascent to the winning-post. The T.Y.C. is 5 furlongs 120 yards, straight.

BROMLEY—An oval course, a few yards over a mile. The Seven-Furlongs Course is of a horse-shoe shape.

CAMBRIDGE—Perfectly flat, and about 1¼ miles round. T.Y.C. 6 furlongs.

CANTERBURY—Nearly 2 miles, with two or three hills, but not steep. Queen's Plate Course, 2 miles. The Straight Mile is 7 furlongs 83 yards. T.Y.C. last 6 furlongs of the Straight. Round Mile, 7 furlongs 190 yards. The Mile-and-a-half Course is 1 mile 3 furlongs 10 yards.

CARDIFF—Nearly an oval, of 1 mile 52 yards, with a straight run in of a quarter of a mile, perfectly flat.

CARLISLE—An oval of 1 mile 90 yards. T.Y.C. (from the Style turn), about 6 furlongs; a straight run home of about 700 yards, with a gradual ascent after passing the chair for about 200 or 250 yards. Queen's Plate Course, 2 miles.

CATTERICK BRIDGE—An oval of 1 mile 60 yards, almost flat; from the Catterick turn in is a little short of half a mile. New T.Y.C. 4 furlongs 147 yards, with a straight run in.

CHELMSFORD—A round or oval course, about 30 yards short of 2 miles, but made up to 2 miles by starting between the distance-post and the winning-chair. The last quarter of a mile is a gradual rise. The Half-mile, Three-quarters of a Mile, and Seven-Furlongs Courses, are straight. Queen's Plate Course, 2½ miles.

CHELTENHAM—An oval of 1 mile, with a slight dip about 3 furlongs from home, from whence the run in is straight. T.Y.C. 6 furlongs.

CHESTER—A flat circular course of about 1 mile 50 yards. T.Y.C. 6 furlongs. From the Castle-pole, once round and in, is rather more than 1¼ miles. Cup Course, about 2¼ miles. Grosvenor Course, about 1¼ miles. Queen's Plate Course, twice round, rather over 2 miles.

CHESTERFIELD—Nearly circular, and about 1½ miles round; the run in is about a quarter of a mile, straight, and rather on the ascent. T.Y.C the last half mile.

CROXTON PARK—Course pear-shaped, 22 yards short of 2 miles; the run in is flat and perfectly straight for 840 yards. Granby Course, about 1½ miles.

DERBY—An oval of 1¼ miles, perfectly flat, with easy turns. There is also a straight half mile.

DONCASTER—A circular and nearly flat course of about 1 mile 7 furlongs 70 yards. The shorter courses are portions of this circle. T.Y.C. 7 furlongs 214 yards. Red-house in, 5 furlongs 152 yards. Rifle Butts in is about 6 furlongs. St. Leger Course, about 1 mile 6 furlongs 132 yards. Cup Course, 2 miles 5 furlongs 14 yards. Fitzwilliam Course, 1 mile. Hopeful Course, 5 fur-

longs. Two-mile Course, 2 miles 15 yards. Queen's Plate Course, same as the Cup Course.

DURHAM—An oval of nearly 1 mile. T.Y.C. 6 furlongs, flat, except a short dip in the middle. There is an ascent up to the T.Y.C. starting-post.

EDINBURGH—Nearly oval, and measuring $1\frac{1}{4}$ miles 46 yards, with a nearly straight run in of half a mile, rising slightly from the distance. The T.Y.C. is fully 5 furlongs. Queen's Plate Course, twice round, about $2\frac{1}{2}$ miles.

EGHAM—On the Runnymede, is an oval course 66 yards short of 2 miles, and nearly flat. T.Y.C. 6 furlongs, straight, as is also the Mile Course. Queen's Plate Course, 2 miles 240 yards.

EPSOM—The Old Course, now seldom used, is 2 miles, of an irregular circular form, the first mile up hill. The late Derby Course is exactly $1\frac{1}{2}$ miles, and somewhat in the form of a horseshoe; the first three-quarters of a mile may be considered as straight running, the bend in the course being very trifling, and the width very great; the next quarter of a mile is in a gradual turn, and the last half mile straight. The first half mile is on the ascent, the next third of a mile level, and the remainder is on the descent till within the distance, when the ground again rises. For the New Derby Course (first used in 1848) the horses start in front of the late Sir G. Heathcote's stables, and run into the Old Derby Course at the mile-post—this first half mile is also on the ascent. The T.Y.C. is 6 furlongs, and runs into the Old Course above the roads at the Walton turn. The Metropolitan Course is $2\frac{1}{4}$ miles; for this race the horses start at the winning-chair and run the back way of the Derby Course as far as the road, when they turn to the right and go round the hill, coming into the Derby Course again about a mile from home. The Craven Course is $1\frac{1}{4}$ miles. The Half-mile Course is straight, and exactly half a mile. The Queen's Plate Course is the same as the Metropolitan Course.

GLOUCESTER—$1\frac{1}{4}$ miles, flat, with straight run in of 3 furlongs; T.Y.C. 5 furlongs.

GOODWOOD—Orange Course: the horses start at the Orange-post on the Queen's Plate Course, and run the Maidstone Course, a little short of 3 miles. Cup Course: the horses start at the Cup-post, go out to the westward of the Clump, and return to the eastward of the Clump, $2\frac{1}{2}$ miles. T.Y.C.: the straight three-quarters of a mile, upon which all T.Y.C. races are run, unless specified to the contrary. Half a Mile: the last half mile of T.Y.C. Queen's Plate Course: the horses start at the Charlton Down to the north-west of the stand, run over to the east of the Clump, go the outside circle of the hill, and return to the east of the Clump, about 3 miles 5 furlongs. One Mile: the horses start at the mile-post, and run home to the westward of the Clump. Once Round: the horses start at the winning-post, go out to the westward of the Clump, and return the same way. $1\frac{1}{2}$ miles, $1\frac{3}{4}$ miles, and 2 miles, are run upon the Cup Course. Craven Course: $1\frac{1}{4}$ miles.

HAMPTON—A flat oval course of $1\frac{1}{2}$ miles. T.Y.C., a few yards over half a mile, and straight. Surrey and Middlesex Stakes Course, and the Queen's Plate Course, 2 miles, start at the T.Y.C., go once round and in.

HARPENDEN—A two-mile course. There are courses of a mile, and a mile and a distance. T.Y.C. $4\frac{1}{2}$ furlongs, quite straight; the course is 30 yards wide.

HASTINGS—Circular, not quite a mile in circumference, and on a dead flat.

HENDON AND KINGSBURY—A battledore course of $1\frac{3}{4}$ miles, 6 furlongs being straight, the first furlong up hill, 3 furlongs down hill, with 2 furlongs up hill to the finish.

HEREFORD—An oval course, perfectly flat, 1 mile 1 furlong 107 yards round, with a straight run in of not quite half a mile.

HOYLAKE—Pear-shaped, rather over a mile, and quite flat, with a straight run in of a quarter of a mile. T.Y.C. about half a mile.

HUNGERFORD—More than a mile round.

HUNTINGDON—A round, flat course, short of two miles by a distance, with a straight run in of half a mile, which is the T.Y.C.

IPSWICH—Somewhat in the form of the letter D, made up to 2 miles by starting at the distance-post; the straight side, which is wider than the rest, and on which are both the winning and the distance posts, is about 6

furlongs in length. Queen's Plate Course, 2 miles.

KNIGHTON—A flat pear-shaped course of about 1 mile; for longer distances the course is crossed, making a figure of 8; run in of about 700 yards, nearly straight.

KELSO—An oval course of exactly 1¼ miles, with a straight run in of about half a mile up a slight ascent.

KING'S LYNN—An oval of about 1¼ miles, with a straight run in of nearly half a mile, quite level.

KNUTSFORD—An oval and nearly flat course of 1 mile, with a straight run in of about 500 yards. T.Y.C. about 5 furlongs.

LANARK—The course is 1 mile, nearly circular, and quite level, with a straight run in of 2½ furlongs.

LEICESTER — Rather oval in shape, 1 mile 100 yards, nearly level; the straight run is 540 yards in length, and flat. The T.Y.C. is half of the oval. Queen's Plate Course, 3 miles.

LEWES—A horseshoe course of 2 miles, the first half mile being a strong incline, then level to the T.Y.C. (about five furlongs from home), next a slight ascent for a considerable distance, then level for a couple of hundred yards, and again a strong incline to opposite the stand, finishing on the level. The New Course is about 2½ miles, starting at the stand. Queen's Plate Course, 2 miles.

LICHFIELD—An oval of 2 miles, starting at the distance-post. T.Y.C. about half a mile, straight. Queen's Plate Course, 2 miles.

LINCOLN—A circular course of 1 mile 6 furlongs 23 yards; straight run in of nearly half a mile, which is the Brocklesby Stakes Course. T.Y.C. 5 furlongs 100 yards, except at the Spring Meeting, when the T.Y.C. is the straight half mile. Queen's Plate Course, 2 miles.

LIVERPOOL (at Aintree)—An oval of 1½ miles, one side gently declining, the other rising from the Canal side. Cup Course, about 1½ miles, starting opposite the stables. From the Canal point in is nearly 6 furlongs. Straight run in, about 1000 yards. T.Y.C. half a mile. Queen's Plate Course, 2 miles.

LUDLOW—Nearly circular, with very little rise or fall, except at the Butt turn, and not quite 1½ miles.

MANCHESTER (New Course)—1½ miles, with straight run in of 1000 yards. T.Y.C. about 5 furlongs.

MANSFIELD—A long oval of 1¼ miles. T.Y.C. a straight half mile.

MARGATE—A few yards over a mile. T.Y.C. 5 furlongs, straight.

MEOPHAM—An oval of 1 mile, nearly flat, with a straight run in of 400 yards.

MONMOUTH—A circular course of a little more than 6 furlongs, and quite flat.

MUSSELBURGH—1¼ miles 46 yards, with a nearly straight run in of half a mile.

NEWCASTLE-ON-TYNE—Rather more than 1¾ miles, rising slightly for 300 yards to the right of the winning-post, then gradually descending to the Newcastle turn (about a mile from home), then level to the Morpeth turn (last quarter of a mile), when there is a slight ascent. A new Mile Course is formed, leading with a gradual sweep at the Morpeth turn into the old straight run in; the T.Y.C. (about 6 furlongs) is on this new course. Queen's Plate Course, 2 miles.

NEWMARKET.

	Miles.	Fur.	Yds.
The Beacon Course is	4	1	143
Round Course	3	4	139
Summer Course (last 2 miles of R.C.)	2	0	0
Last three miles of B.C.	3	0	60
Ditch in (from the Running-gap to the end of B.C.)	2	0	105
The Last Mile and a distance of B.C.	1	0	240
Ancaster Mile (last mile, straight)	1	0	18
Criterion Course (from the turn of the Lands in)	0	6	0
Audley End Course (from the starting-post of the T.Y.C. to the end of the B.C.)	1	7	42
Across the Flat	1	2	73
Rowley Mile (last mile of A.F.)	1	0	17
Ditch Mile (first mile of A.F.)	0	7	210
Abingdon Mile (on the Flat)	0	7	212
Last half of Ab.M.	0	3	217
Two Middle Miles of B.C.	1	7	158
Last Mile and a Half of T.M.M.	1	4	29
Two-year-old Course (on the Flat)	0	5	140
New Two-year-old Course (on the B.M.)	0	5	136
Last Half Mile of New T.Y.C.	0	4	0
Yearling Course (on the Flat)	0	2	52
New Yearling Course (from starting-post of last half of Ab.M. to winning-post of D.M.)	0	2	138
Bunbury Mile (a straight mile, finishing at the end of R.C.)	0	7	196
Chesterfield Course (last half of B.M.)	0	3	212
Bretby Stakes Course (last three-quarters of R.M.)	0	6	0
Cesarewitch Course (from the starting-post of T.M.M. to the end of the Flat)	2	2	28
Cambridgeshire Course (last mile and a distance, straight)	1	0	240
Suffolk Stakes Course (last mile and a half of R.C.)	1	4	2
Bedford Stakes Course (last 5 furlongs of A.F.)	0	5	0
From starting-post of last half of Ab.M. to T.Y.C. winning-post	0	1	143½
From Old Betting-post on Criterion Course to the end of B.C.	0	3	39

NEWTON—A triangular course of about 1¼ miles, with a strong hill, and straight flat run in of nearly half a mile. The Golborne, or Two-year-old Course, is the straight half mile. Redhouse in, about 5 furlongs.

NORTHALLERTON—A triangular-shaped course of 1 mile, with easy turns, and a straight run in slightly on the rise. T.Y.C. 6 furlongs.

NORTHAMPTON—An oval of 1½ miles 180 yards, with a hill half way, and a straight run in of half a mile, which is the T.Y.C. The New Spencer Plate Course is perfectly straight, and about 5 furlongs in length. The Althorp Park Stakes Course is the last half mile of the Spencer Plate Course. Queen's Plate Course, 2 miles.

NOTTINGHAM—A long oval of 1 mile 1 furlong 207 yards, with two straight sides of half a mile each. The Half-mile Course is quite level and straight. T.Y.C. 6 furlongs. Queen's Plate Course, 2 miles.

ODIHAM—An oval of about 1¼ miles. T.Y.C. a straight half mile.

OXFORD—The Two-mile Course is in the form of the figure 9 reversed, three-quarters of a mile being straight. The Mile Course and the Three-quarters of a Mile Course (the T.Y.C.) are straight, and of great width.

PAISLEY—Flat and nearly square, with a little rising ground, and scarcely a mile round. T.Y.C. 6 furlongs.

PERTH—A right-handed course, almost entirely a dead flat, nearly oval, and as nearly as possible one mile and a third round.

PLYMOUTH—Nearly oval, about 1½ miles. T.Y.C. half a mile, straight.

PONTEFRACT—An oval of great width, and 2 miles 156 yards round, last half mile slightly on the ascent. T.Y.C. 6 furlongs.

RADCLIFFE—Oval course, nearly 1¼ miles round, almost flat, 21 yards wide, and with a straight run in of more than 700 yards. T.Y.C. 6 furlongs.

READING—Flat, 70 yards short of 2 miles, in shape nearly resembling a figure of 9, with a straight run in of 7 furlongs. T.Y.C. 6 furlongs.

RICHMOND—An oval of 1½ miles 164 yards, with straight run in of about 5 furlongs. From the Grey stone, 4 furlongs 200 yards of straight running, rather against the hill, and finishing on the level; from the Lime-kiln gate, 6 furlongs 100 yards. Queen's Plate Course, 3 miles.

RIPON—Upwards of a mile round; the straight run in is very slightly on the ascent. T.Y.C. 5 furlongs.

ROTHERFIELD—An oval of 7 furlongs and a few yards, with a flat run in.

SALISBURY—The Mile Course is straight and flat, with the exception of a rise for the first 50 yards. The T.Y.C. is the last three-quarters of this course. For the Two-mile Course the horses run past the Stand, and diverge to the left from the straight course, which they re-enter at the T.Y.C. starting-post. Queen's Plate Course, 3 miles.

SANDOWN PARK (ESHER)—A pear-shaped course of nearly 2 miles. The T.Y.C.'s are about half a mile each; the inner one has a straight run in of 700 yards, with a gradual rise to the chair; the outer course is straight for the last 620 yards, with a rather more severe finish.

SHREWSBURY—The Old Course is an oval of 1 mile 1 furlong, with a slight ascent from the last turn. The new straight T.Y.C. is 5 furlongs. Queen's Plate Course, 3 miles.

SOUTHAMPTON—An irregular oval, 1½ miles 100 yards round, with a slight dip near the starting-post, and a considerable rise at the finish. T.Y.C. a straight run in of about 5 furlongs.

STAMFORD—Oval, with a straight run in of nearly half a mile. This course is flat, but there is a new straight mile, the first half of which is rather up hill till it joins the Round Course at the Easton turn. Cup Course, 3 miles. Burghley Stakes Course, 2¼ miles 146 yards. T.Y.C. 5 furlongs. St. Leger Course, about 1¼ miles. Ketton Stakes Course, about 1¾ miles.

STOCKBRIDGE—Nearly round, somewhat hilly, the last three-quarters of a mile straight, for the run in; and there is also a straight mile. T.Y.C. 6 furlongs; Bush in, about 5 furlongs.

STOCKTON—Perfectly level, oblong, and 1 mile 6 furlongs 110 yards in length. The T.Y.C. 6 furlongs, nearly straight.

TENBURY—About 1¼ miles, with a little descent to the far side, then a gradual rise to the length, which is over 500 yards, straight and flat. T.Y.C. last half mile.

TENBY—A dead flat, 1 mile round.

THIRSK—Elliptical and flat, 20 yards wide, and 1 mile 1 furlong 40 yards in length. T.Y.C. 4 furlongs 130 yards, straight.

TIVERTON—Circular, 7 furlongs round, quite flat, with a nearly straight run in of a quarter of a mile.

TOTNES—Oval, three-quarters of a mile round, quite flat, with a straight run in of a quarter of a mile.

TUNBRIDGE—Circular, a dead flat, and somewhat under a mile round.

WALSALL—Oval, 1 mile less 20 yards. In the first part there is a stiff hill of about 300 yards, and about the same distance at the top is quite flat, after which it gently declines, with a straight run in, quite flat, for nearly half a mile.

WARWICK—Nearly circular, and 1 mile 6 furlongs 60 yards round, with a strong hill about half a mile from the starting-post. The Leamington Stakes Course, 2 miles 44 yards. T.Y.C. 6 furlongs. Queen's Plate Course. 2 miles.

WENLOCK—An oval, about 100 yards short of a mile, with a straight run in of 500 yards.

WEST DRAYTON—Perfectly flat, oval in shape, and rather more than a mile round. The T.Y.C. is the half of the oval, with more than a quarter of a mile straight run in.

WEYMOUTH—A round course of one mile, quite flat, with a straight run in of about half a mile. Queen's Plate Course, 2 miles.

WHITEHAVEN—Oblong, a few yards short of a mile, with a straight run in of about 500 yards.

WINCHESTER—Two miles round, with a straight run in of about half a mile, the first part of which is a strong hill. T.Y.C. about 5 furlongs. Queen's Plate Course, 2 miles.

WINDSOR—A flat course. For the Two-mile Course the horses start at the stand and run a figure of 6, the last 6 furlongs being straight. There is also a straight course of about 7 furlongs.

WOLVERHAMPTON—An oval of $1\frac{1}{4}$ miles, with a straight run in. T.Y.C. a straight half mile.

WORCESTER—A dead flat, of irregular shape. The Half-mile and the Five-Furlongs Courses are straight, The Mile-and-quarter is a figure of 6, the first and last half mile being straight. The Two-mile Course is a figure of 8, the last half mile straight; T.Y.C. the straight half mile.

WYE—In shape like a battledore, $1\frac{3}{4}$ miles, with 6 furlongs straight, of which the first 2 furlongs are down-hill, the third up, the fourth down, and the last two up hill to the finish.

YARMOUTH—Round, 1 mile 2 furlongs 200 yards, perfectly level, and on a sandy soil. T.Y.C. 5 furlongs 80 yards straight.

YORK—Quiet flat, rather oval, and about 2 miles in lengh. T.Y.C. 5 furlongs 44 yards. Great Yorkshire Stakes Course, $1\frac{3}{4}$ miles. The Old and New Two-mile Courses are exactly 2 miles. Queen's Plate Course, 2 miles.

THE CURRAGH COURSES, IRELAND.

	Miles	Fur.	Yds.
Anglesey Post	0	6	0
New Rathbride Post	1	0	130
Three-year-old Course	1	2	22
New Two-year-old Course	0	5	136
Red Post	1	6	3
Post on the Flat	1	3	58
Conolly's Mile	1	0	0
Peel Course	1	6	12
New Waterford Post (on the Peel Course)	1	2	0
Marquis's Post	0	2	178
New Chain	0	3	96
Madrid Course	1	0	130
Sligo Post (a few yards longer than Red Post).			

ABBREVIATIONS.—The following are commonly used in racing parlance:—

1st. *For the Various Newmarket Courses.*—Ab. M., Abingdon Mile—An. M., Ancaster Mile—B.M., Bunbury Mile—D.M., Ditch Mile—R.M., Rowley Mile—T.M.M., Two Middle Miles of Beacon Course—A.F., Across the Flat—D.I., Ditch in—A.E.C., Audley End Course—R.C., Round Course—B.C., Beacon Course—T.Y.C., Two-year-old Course—Y.C., Yearling Course.

2nd. *For Description of Horse.*—C. stands for colt—f. for filly—g. for gelding—h. for horse—p. for pony—b. for bay—bl. for black—br. for brown—gr. for grey—ch. for chesnut—ro. for roan—d. for dun—yrs. for years.

3rd. *For Conditions of Race, &c.*—Gs. stands for guineas—sov. for sovereigns—ft. for forfeit—h.-ft. for half-forfeit—pd. for paid—p.p. for play or pay—recd. for received—dr. for drawn—dis. for distanced—disq. for disqualified.

SECT. 3.—THE JOCKEY CLUB.

THE AFFAIRS OF THE TURF are under the control of the Jockey Club, consisting of a number of noblemen and gentlemen of the highest respectability and honour, who admit fresh members on a vacancy occurring, by vote among themselves. They usually meet at Newmarket, but sometimes elsewhere,

according to their own option. Three stewards are elected (one of whom retires every year), who generally decide all disputed cases arising throughout the kingdom, but their special office is the management of the races and race-course at Newmarket, the latter being under their tenancy. Here they can pass what rules they please, which are binding upon all who run, because they have full power to warn off recusants, and to refuse to allow them either to train or run horses, to ride, or even to make their appearance on the ground. This wholesome control is of great service to the Turf, and it is only to be regretted that it does not extend to the whole kingdom. Generally, however, other races are held under the same conditions as the Newmarket, but, being on public land, there is not often the power to warn off improper characters as at Newmarket, Goodwood, and some others. The Stewards of the Jockey Club are also, *ex officio*, stewards of Epsom and Ascot. The following Rules of the Jockey Club are the only ones which are generally interesting:—

Rule 7.—All disputes relating to racing at Newmarket shall be determined by the three stewards; if only two stewards be present they shall fix upon a third person, being a member of the Club, in lieu of the absent steward; but the stewards, if they think fit, may call in any other members of the Jockey Club to their assistance, or may refer the case to a general meeting, if the importance or difficulty of the matter in dispute shall appear to them to require it. The witnesses examined shall be required to sign their evidence; and if either party desires to have a shorthand writer engaged to take down the evidence, the stewards may (if they think proper) engage a writer at the expense of the person making the request.

Rule 8.—If any dispute arising elsewhere shall be referred to the Stewards of the Jockey Club, and they shall think fit to take it into consideration, the matter must relate to horse-racing, and be sent by the stewards of the meeting where the matter in question occurred.

Rule 9.—The Jockey Club and the stewards thereof take no cognizance of any disputes or claims with respect to bets.

Sect. 4.—The Weights for Age.

The weights for the Queen's Plates have already been given, at page 483. The annexed Table gives Admiral Rous's standard of weights for age, according to varying distances which are to be run:—

Scale of Standard Weights For Age.—(*Admiral Rous.*)

Age. Years.	April 1. st. lb.	May 1. st. lb.	June 1. st. lb.	July 1. st. lb.	Aug. 1. st. lb.	Sept. 1. st. lb.	Oct. 1 st. lb.	Nov. 1. st. lb.
HALF A MILE.								
2	5 2	5 7	5 12	6 1	6 3	6 5	6 7	6 8
3	7 5	7 7	7 10	7 13	8 0	8 1	8 1½	8 2
4	8 7	8 7½	8 7	8 7	8 7	8 7	8 7	8 7
5, 6, and aged.	8 9	8 8	8 7½	8 7	8 7	8 7	8 7	8 7
T.Y.C., OR SIX FURLONGS.								
2	4 9	4 13	5 3	5 6	5 8	5 10	5 12	6 0
3	7 2	7 4	7 6	7 7½	7 9	7 10	7 11	7 12
4	8 7	8 7	8 7	8 7	8 7	8 7	8 7	8 7
5, 6, and aged.	8 13	8 12	8 11½	8 11	8 10½	8 10	8 9	8 8
ONE MILE.								
2	4 2	4 4	4 7	4 10	4 13	5 2	5 4	5 5
3	6 12	6 13	7 1	7 4	7 6	7 7	7 8	7 9
4	8 7	8 7	8 7	8 7	8 7	8 7	8 7	8 7
5	9 0	8 13½	8 13	8 12½	8 12	8 11½	8 11	8 10
6 and aged.	9 1	9 0	8 13½	8 13	8 12	8 11½	8 11	8 10
TWO MILES.								
2	0 0	0 0	0 0	0 0	4 2	4 7	4 9	4 11
3	6 3	6 7	6 12	7 0	7 2	7 5	7 6	7 7
4	8 7	8 7	8 7	8 7	8 7	8 7	8 7	8 7
5	9 2	9 1½	9 1	9 0½	9 0	8 13	8 12	8 11½
6 and aged.	9 5½	9 5	9 3½	9 3	9 2	9 1½	8 13	8 12
THREE MILES.								
2	0 0	0 0	0 0	0 0	0 0	0 0	4 0	4 4
3	6 0	6 4	6 8	6 11	6 13	7 0	7 2	7 4
4	8 7	8 7	8 7	8 7	8 7	8 7	8 7	8 7
5	9 4	9 3	9 2	9 1½	9 1	9 0½	9 0	9 0
6 and aged.	9 8	9 6½	9 6	9 5	9 4	9 3	9 2	9 1

SCALE OF STANDARD WEIGHTS FOR AGE.—(*Admiral Rous.*)—*continued.*

FOUR MILES.

Age. Years.	April 1. st. lb.	May 1. st. lb.	June 1. st. lb.	July 1. st. lb.	Aug 1. st. lb.	Sept. 1. st. lb	Oct. 1. st. lb.	Nov. 1. st. lb.
3	5 10	6 0	6 4	6 7	6 9	6 10½	6 12	7 0
4	8 7	8 7	8 7	8 7	8 7	8 7	8 7	8 7
5	9 6	9 5	9 4	9 3	9 2½	9 2	9 1½	9 1
6	9 11	9 9	9 8½	9 7	9 6	9 5	9 4	9 4
aged.	9 13	9 10	9 9	9 7	9 6	9 5	9 4	9 4

Mares to be allowed 5 lb. from April to June 1; 3 lb. from June 1 to September 1; 2 lb. from September 1 to November. Geldings allowed 3 lb. throughout the year.

SECT. 5.—THE RIDING OF RACES.

PROFESSIONAL JOCKEYS.—Among the two hundred jockeys (or thereabouts) whose names appear in the return lists, many ride only for their own stables, in which they are usually employed as exercise-lads of a superior class—that is, to ride trials, lead gallops, ride sweats, &c., and are not to be obtained except by permission of their masters, to whom they are articled. Others, who are in great request, are regularly engaged nine or ten deep, having a first, second, third, and fourth master, &c., and can always be claimed by each in succession for any particular race. The education, fees, &c., of the professional jockeys have already been alluded to.

GENTLEMEN JOCKEYS are defined in a very loose and unsatisfactory manner in most cases where the definition is merely as above. Generally, however, as in steeplechases, to which the term is now almost entirely confined, a further limitation is given to members of certain recognised clubs, or officers of the army or navy, &c. Any person who can be proved to have ever ridden for hire is now considered to be a professional, and ranks among that class where penalties are affixed. (See Steeplechases.)

THE RIDING A RACE, whether by amateurs or professionals, ought to be conducted on the same principle; and it demands the following essential points:—first a good and powerful seat; secondly, good hands; thirdly, a good knowledge of pace: and fourthly, a head to take advantage of these various elements of success. The jockey's seat is of a peculiar form, and he rides very differently from any other horseman, since his whole object is to give as much ease as possible to his horse, and allow him to gallop with as little restraint as possible, as far as his weight is concerned, whilst at the same time he uses just sufficient restraining power with the bit to keep his horse collected, and cause him to avoid that "spread-eagle" style of gallop which destroys a horse's chance at once. But this is the A B C of jockeyship; and though there are numberless degrees in it, yet almost every jockey has a sufficiently good seat to do what is here described; his hands are also generally fine enough, because from his early education and constant riding he has acquired sufficient command of the horse's mouth to do what is wanted; though here, again, there are no doubt comparative degrees.

The jockey's chief merits, however, reside in the head, where must be concerted the plan of the campaign which is to be fought, and that without a second's loss of time after the events have presented themselves which will cause the decision to be made. It is true that in most cases the jockey has his orders to make running or to wait; but they are always conditional when the jockey is an experienced artist—or ought to be if they are not. Nevertheless, even when strict orders are given, numberless little accidents occur to call out the courage, skill, and presence of mind of the jockey. First of all, in the start, he must be always prepared for the word, yet without being himself excited, or, as a consequence, fretting and exciting his horse. With one eye on the starter and the field, and the other on his own horse, he awaits the word, and then either gets quickly away, if he is ordered to do so, or keeps third or fourth, &c., as he thinks best, or is instructed. Again, much depends upon the temper of the horse he is riding, for, in spite of orders to the contrary, if he finds that he is destroying his chance by keeping him second, he should let him go in front until he can quiet him and let him settle down into his place. Here the man with a good head is often shown more by his daring to disobey orders than by his slavishly following them to the certain destruction of his

chance. The avoiding loss of ground is also a grand essential, requiring, however, good hands more than head, except when judgment is wanted in getting through a ruck of horses, in which a decision must be come to whether to attempt to go inside, or out, or through, and upon which often the fate of a race depends. Sometimes it is impossible to get through them, and the attempt is fatal, whilst at others the experienced eye detects that they are all, or nearly all, sinking, and cannot possibly impede him in his attempt; because they are sure not to stop exactly at the same moment, and one by one they make gaps which he can easily fill. Finally, when he reaches the front rank the jockey has to display his art in finishing at the right time, and in the right manner. At this point of the race his horse may be the freshest of the lot and the gamest, yet with a slight want of pace, and then he sets to in good time and wins by a display of lasting qualities, with perhaps a liberal use of the whip and steel. Or he may be on the fastest at a short struggle, yet evidently on one which is unfit for a long race, and here his object is to wait at a short distance behind till the very last moment, if he thinks the leading horses will only beat themselves ready to his hand by racing at one another from the distance. If he can only see them do this his chance is not yet out: he takes a pull at his horse, collects him, and yet keeps him handy to the struggling leaders; then when he thinks he can reach them at the post, he comes with a rush which his poor, tired, yet speedy horse can just live through, and is victorious, but is again passed perhaps a length beyond the winning-post.

On the other hand, the clumsy professional jockey, or the more inexperienced gentleman-rider, begins by ramming his spurs into his horse's sides for fear of losing ground at the start, which sets him all abroad changing his legs, and in difficulties from the first. His horse, however, is so game that he recovers himself and answers his rider's call to go in front, which he reaches after a rattling struggle for the lead; he then recollects that his instructions are to lie second or third, and therefore he stops his horse, again, perhaps, causing him to change his leg. An experienced eye behind detects this and immediately comes at him, when, in alarm, he takes up the cudgels and runs at his antagonist, who gives way rather than distress his own horse, having achieved his object. But he is not long left quiet; another fancies he can do the same; and tries with good effect until at last, with the best horse in the race, he is unable to keep his place when a hundred yards from home, and instead of being an easy winner without whip or spur, is unable to obtain the slightest response from the severest exhibition of both of which he is capable. He goes in, still, perhaps, flogging and spurring, with a loose rein, his horse extended to the utmost, and himself mortified and exhausted.

When such scenes as these are constantly occurring on the race-courses where gentlemen jockeys exhibit themselves, it is no wonder that such races are not favourites with the public, or that it should be found that seven pounds are not enough to bring them up to a level with the professional. There are, however, some of this class who can steer a horse in a race with a steady hand and cool head; but, among the light-weights especially, they are rarely to be met with. Amateur races are, therefore nearly a dead letter, and the professionals have the course to themselves.

DESPERATE EFFORT OF THE STEEPLE-CHASER TO CLEAR A WATER-JUMP.

PART II.

HORSE-RACING.

BOOK II.—STEEPLECHASING AND HURDLE-RACING.

CHAPTER I.

STEEPLECHASING.

SECT. 1.—OBJECTS OF STEEPLECHASING.

THIS fashionable sport was brought into notice about forty-five years ago, avowedly for the purpose of encouraging the breed of hunters and cavalry horses, which were said to have degenerated from their old form and powers, in consequence of the general abolition of three and four-mile races under high weights, and the substitution of shorter races at light weights, especially of those for two-year-olds. It was therefore supposed that if steeplechases were run over courses of four miles, and at weights which at first were fixed at 12st., a market would be established for horses capable of such exertions, and the general breed of these animals would be improved. With this view, steeplechases were established at St. Albans, Aylesbury, and other places, the distance being generally about four miles, and at first merely from point to point; both being fixed, and the riders allowed to take their own course, so that 100 yards of road were not ridden by them at any one time. The line was generally a severe one, and often so much so that only one or two horses succeeded in arriving at the winning-post, the rest being stopped by accidents, or by refusing to take some formidable fence. At that time, the only mode of witnessing the whole or the greater part of a steeplechase was to ride as near as possible, by taking advantage of roads, &c., and in this way some hundreds of mounted spectators were generally present. In spite of the size and impracticability of the fences few cases of permanent injury or death to horse or rider occurred; and the sport becoming popular, it was resolved to make the course circular, or as nearly so as the nature of

the ground would admit, and thus to allow any number of spectators to see the whole of the chase without trouble or risk, either by placing them on an adjoining eminence, or by taking advantage of a race-stand, if such a building was available. In process of time, and from corresponding causes, the same thing happened with steeplechases as with flat-races, handicaps were introduced, and the meetings not being under the control of the Jockey Club, more flagrant instances of fraud were committed than even on the established race-course. Some excuse may perhaps be offered for their introduction, when it is remembered how Mr. Elmore's two horses—Lottery and Gaylad—swept away all the best prizes for several years. After twenty large sweepstakes had fallen to their prowess, and when even the double penalty of 14lb. for winning failed to stop Gaylad at Chelmsford, in 1841 (though certainly 18lb. had succeeded with Lottery at Liverpool in the same year), it can scarcely occasion surprise that some expedient should have been adopted; but that the system of penalties would have been better than the handicap is, I think, now clearly proved. Newport Pagnell commenced with one in which the top weight was 12st. 12lb., and the lowest 10st. 10lb.; but, nevertheless, Lottery and Gaylad were first and second. But in a second attempt in the same year, the handicapper, by crushing Lottery with 13st. 6lb., and Gaylad with 12st. 12lb., succeeded in letting in Lucks-all, carrying, however, 11st. 5lb., the lowest weight being 10st. 7lb. Next came Hereford, where Gaylad, with 12st. 8lb. on him, was at 3 to 1, and *required the additional weight of a double-rein bridle with all the power of a Mason to stop him.* After this Liverpool, still adhering to 12st. each, as the weights, with a penalty upon Lottery for winning of 18lbs., allowed Gaylad to carry on the series of successes achieved by Mr. Elmore. These lasted through 1842-3, in spite of handicaps and penalties, Gaylad, with 12st. 8lb. on him, winning at Oxford, though second only at Worcester; but succeeding again at Northampton (handicap), and at Nottingham and Chelmsford (12st. each, with 14lb. extra). This, however, was their culminating point, for partly by their severe work, and partly from their high weights, no stake was added by them to the list after this time, except a small one by Lottery, in 1844. Discount, Dragsman, Vanguard, and Peter Simple (the grey), now had a throw in, whilst the two, up to this time, almost certain winners were scratched before running, or else failed in the actual trial. Perhaps they were reserved for a better day, but it never came, and few horses since that time have won more than two or three large steeplechases. Besides the evils inherent in the very nature of handicaps, there was also in the steeplechase the misfortune that any rider might easily pull his horse, either at his fences or elsewhere, without the possibility of detection, unless he were so awkward as to be incapable of properly carrying out his orders, as happened once with a very celebrated grey horse.

At first steeplechases were patronized and supported by a sprinkling of noblemen and gentlemen, who gave long prices for horses in the hope of carrying off the coveted prizes, or at all events of possessing valuable hunters, if they failed in the first object; but finding that they seldom were allowed to win, and that their horses were, in addition, spoiled for hunting, they gradually abandoned the field, and the stakes were for a time almost entirely contested by trainers and horse-dealers. One chief reason of this temporary want of support was the discovery of the frauds which their supporters too often practised; but not much less was the disappointment felt by the well-wishers to their country, when they arrived at the conclusion, from experience, that they not only spoilt the individual horses engaged, but that they did not encourage the breeding of weight-carrying hunters, for which steeplechases were mainly established. Originally, when the fences were such as only a perfect hunter could get over, none but such horses were of any use: and if these courses had continued to be fixed upon, no doubt some little encouragement might have been afforded to the breeder to produce strong yet active horses, of the description of Vivian, Grimaldi, Moonraker, &c., all of which could have carried 16st. with ease. But in order to collect a large field, and with it a paying crowd, the system of handicaps introduced a lot of weedy

animals incapable of carrying much more than 9st., and differing only from our ordinary racehorses in being slower. To meet their requirements, the fences were reduced, and at last, in most cases, they were brought down to the capacity of a schoolboy's pony; the excuse being that large fences were attended with danger to the horse. The result, however, instead of producing what was desired, has been, that in proportion to the small size of the fences has been the number of broken backs, because weedy thoroughbred horses were entered at these localities, and galloped till they were exhausted, and then, in attempting to get over some small fence beyond their powers in a state of exhaustion, they stuck their hind-legs into the bank, and fell with such force as to break their backs, no longer guarded by the powers of untired muscular fibres. Now, if the fences had been kept bigger, no such horses would ever have been entered, or if entered, they would have refused the first fence; and moreover, the jockeys, *for their own sakes*, would have avoided forcing the pace, because they would have known that a tired horse over a big fence falls upon his rider, and breaks his ribs or his neck. Over a small one, however, the horse goes at it, fast enough to land his rider clear of him if he falls, and seldom to do him damage, although breaking his own back.

In consequence, then, of these objections to the cross-country sport, and finding, that, unlike flat-racing, there were no counterbalancing advantages, the Jockey Club and the higher racing authorities consistently stood aloof, and from 1850 to 1855 steeplechasing was reduced to a comparatively low ebb, both in point of entries and localities. Liverpool, Epsom, and Worcester still took advantage of their stands to attract an attendance; but Newport Pagnell, St. Albans, and all the old spots where a good hunting country tempted the real sportsman to participate in the adventurous character of the scene, were deserted. Much as I admire the beauty of the horse when taking a fence or a brook in his stroke, and still more when twenty or thirty of such as Lottery, Gaylad, or Peter Simple, were in the air almost at the same moment, I could not regret this result: from the very first the control of some superior power, like the Jockey Club, was wanted; and the constant recurrence of fraud, quarrelling, and mistakes detracted so much from the pleasure otherwise to be derived, that it could not occasion surprise when fashion deserted the sport. Still, however, it mustered nearly as many seats of contest as ever, though of an inferior grade, and must be classed as one of the sports of the country. Farmers, in many cases, entered their horses with a view to sale, or for the purpose of competition; and if the steeplechase itself did not tend to spoil the hunter, this would be a very laudable end, and a good reason for establishing small local steeplechases confined to farmers' horses. But, unfortunately, the training of the horse and the necessity for practising him in rushing at his fences, or at least in going fast at them, takes away from his value as a hunter, and unfits him for the use of most men, who do not like a horse which cannot be stopped in the face of a gravel-pit or a deep roadway. These dangerous spots are of constant occurrence in the hunting-field, and to avoid them most men like a horse to go quietly at his fences, by which he also has more command over himself and can measure his power more exactly; but in the steeplechase everything depends upon pace, and unless a horse not only gets away quick from his fences, but goes a good pace at them, he is speedily beaten. Hence, as I before remarked, they are a bad school for hunters, and are merely objects of sport, which, unfortunately, is mixed up with accompaniments of that low kind as to be opposed to the morals of those who partake in it, in every point of view.

But since the above remarks were written, in 1855, the prospects of steeplechasing have greatly revived under the auspices of a few gentlemen devoted to the sport. National Hunt and Grand Military chases have been instituted, in which fair natural fences have been adopted, and over which none but good hunters would have much chance. A code of laws has also been passed and made imperative at all steeplechase meetings, so that a great deal of the fraud formerly practised is done away with. Good Leicestershire hunters, like Bridegroom, Lord George, and the Colonel, have more

than once been victorious, but still cast-off racehorses, such as Emblem and Emblematic, too slow for the flat, have, as a rule, won the principal steeplechases, especially over the artificial fences still in vogue at Liverpool, Worcester, Warwick, and other race meetings, where proximity to the stand is the *sine quâ non*. At Market Harborough, Wetherby, Bedford, Rugby, and Cottenham, however, capital natural countries have been selected for the Grand National and Military meetings, and there can be no doubt that the sport has been more than reinstated in its pristine glory and popularity, and the *furore* for it has, moreover, extended to the Continent, but more especially to France and Germany.

Sect. 2.—The Steeplechaser.

General Description. — Lottery, Gaylad, Cheroot, Peter Simple, Discount, Rat-trap, Brunette, Chandler, Proceed, Vainhope, Bourton, The General, Sir Peter Laurie, and last, though not least, The Colonel, winner at Liverpool in 1869-70, together with some others of almost equal powers, may fairly be adduced as the types of that particular horse which is suited for steeplechasing. Of full size, yet not leggy—strong, yet not clumsy—high-couraged, yet not intemperate — the steeplechaser should be the perfection of form. Sometimes the best horses of this kind have been quite thorough-bred — as, for instance, Rat-trap and Sir Peter Laurie; but generally there has been a considerable stain in the pedigree, as in Gaylad, Peter Simple, and The Colonel. Vainhope was nearly thorough-bred, as also, I believe, were Bourton and The General. Many of those which have appeared in the highest form were of still less aristocratic blood—as, for instance, Dragsman and the Shaver Gelding, both of which came out about thirty years ago. The former was a coach-horse in appearance, yet he managed to cut down a field of first-rate horses in a style seldom seen, and ran the fastest race on record, over what was called a four-mile course, but which was really a full quarter of a mile short of that distance. The latter was well up to 16st.

Few thorough-bred horses, however, have sufficient substance of bone to stand the shocks of the jumping, nor can they often carry over a country the weight which is put upon them. There is a vast difference between carrying 11st. over the flat and carrying the same over thirty or forty fences; in the former case, wind is of the greatest importance, and with this quality in perfection and a good heart, if the speed is sufficient, the weight can generally be carried; but over a country the same horse is often unable to lift the weight from the ground in his jumps, from a want of absolute power in the back and hind-quarter. Hence a muscular horse is generally indispensable, though there have been some striking exceptions —as, for instance, Daddy-long-legs in the years 1842-3, and perhaps that remarkable Irish mare, Brunette, who certainly, from her appearance, never would have been selected as capable of carrying 13st. in the way she did. Lord Lurgan's Fugitive also looked a weed, but was far from weedy in her real powers. Nevertheless, in the steeplechase, appearances are, perhaps, a better guide than on the flat. It is easier to go into the saddling enclosure and select a winner of a steeplechase, barring accidents and pulls, and supposing them all to be masters of their trade, than to pick out the winner of a great race—at least such is my experience of these matters; for there is generally a look of power and speed, combined with blood, in the first-rate steeplechaser, which indicates his probable success. Although Brunette did not quite look what she was, she appeared moulded in a most perfect form, and was certainly a most wiry-looking animal; yet no one, I think, could have guessed that she was as good as she really was. But Lottery, Gaylad, Peter Simple, and, in fact, the whole of those horses whose names head this paragraph, would take the eye at once. Discount was the most muscular animal I ever saw, and was the perfection of a strong, well-bred horse, with a constitution of iron, and the temper calculated to carry an old gentleman to harriers, if only his understandings had been sound.

Description fails when attempting to go into a detail of the points which make up any particular kind of horse; the only useful mode of arriving at a knowledge of the appearance of the animal is by means of portraiture, and here even many of the steeplechase

cracks are imperfectly represented. Lottery had the good fortune to be very well taken, as was Brunette, but some others have been wofully misrepresented. The sketch of the steeplechaser given at the head of Book II. shows very well the class of horse most suited for the purpose, and gives also the overtaxed condition of the horse in which he fails to accomplish the leap. The object of the artist is to represent the horse jumping on to the bank, as is too often seen, from the pace having been forced, and his powers gone; this is well shown, and the necessity for avoiding pumping a horse before putting him at wide or high places.

The smallest steeplechaser which, I believe, ever ran successfully in good company was Mr. Vever's Little Tommy. He was barely 14½ hands high, yet he managed to contest the palm with good horses, and carrying a tolerably high weight. On the other hand, most of our best horses have been 16 hands high, or thereabouts; and for the steeplechase that height may be considered the most advantageous. A little horse cannot so well take his fences in his stride, and has to exert himself more to get over them; and though he is more easily collected, and can generally take off nearer his fence, yet he takes so much out of himself in the effort as to impair his powers. Taking, then, all these points into consideration, I should advise the selection of a horse of good size, with great power, good temper, and as much breeding as possible; but his being a little hot in temper is not so great a disqualification as for riding to hounds. Some of our very best steeplechasers have been unmanageable unless they are allowed to go straight away, as is always the case in this kind of sport, and is so seldom long met with in riding to hounds.

With regard to age, few steeplechasers have ever won good stakes until they were six or seven years old, partly from an incapability of staying the distance—usually four miles—but chiefly from a want of sufficient practice. Vainhope, however, won his first two races as a four-year-old, and also ran second for two more in that year; but he had been constantly ridden to hounds, and was a very perfect hunter. His sire also was by Defence, giving him the stoutness which no doubt he possessed; and therefore his exceptional case may be accounted for.

Sect. 3.—Mode of Procuring Steeplechasers.

A First-class Steeplechase Horse is almost as difficult to obtain as a horse fit to win the Derby, and much more so than a good average racehorse. The essentials are more numerous, and though he need not be as fast for a mile or two as the racehorse must be to attain success, yet he must be able to stay a distance of ground, such as four miles, under high weights, at a pace nearly, if not quite, tip-top. It is very remarkable that some of the best stayers in the steeplechase have been notorious jades on the flat, where they never could get beyond half a mile. Lord Coventry's two celebrated mares Emblem and Emblematic are notable instances of the fact, but many more might be adduced. One of the best performances under high weights of any horse over the flat was that of Tranby, in Mr. Osbaldeston's match against time, in which he carried about 11st. four miles in 8 minutes, after previously running the same distance in a little over that time. This feat, however, has been equalled on some occasions in the steeplechase, considering the stoppage and extra exertion caused by the fences. Dragsman did the 3¾ miles in 9 minutes at Worcester; and Abd-el-Kader is said to have won the Liverpool steeplechase, in 1854, 4 miles, in 9 min. 39 sec., which, considering the nature of the ground, is a still more wonderful feat: one being all sound turf, with small fences; the other, chiefly arable, with more severe ones. Thus it will be evident, that what is wanted is a racehorse with the addition of power to carry weight, and temper and courage to enable him to learn his trade. Some horses are so ungovernable that the moment they take it into their heads to dislike what they are set to do, they commence kicking or rearing, and no amount of severity will compel them against their will to attempt a fence. If, therefore, horses do not easily and, as it were, naturally take to jumping, it is generally useless to persevere; and this should be taken into consideration in selecting horses for the purpose.

Another important point is the style of going, which should not be quite the

same low daisy-cutting form which suits the smooth turf of our race-courses. Many a horse which is there quite safe, and is in fact liked all the better for his low style of gallop, would inevitably fall in getting over the grips and unequal ground always occurring at Liverpool and elsewhere. In all cases, therefore, the purchaser should make choice of a horse with action suited to his purpose, in addition to power, pace, and temper; and with these requisites a discarded racehorse, of stout blood, and having sound legs, has often turned out a useful speculation on the steeplechase-course.

In some instances studs have been specially established to breed this class of horses, but the proportion of colts fast enough for the purpose, which were bred from the strong mares selected, was very disappointing. If thoroughbred mares are used, the colts are generally too small, and devoid of power; and if with a considerable stain, the chances are that they are too lumpy and slow. It is only as occasional trump-cards that these animals can be bred; and no science in the world, with all the experience of an octogenarian, will enable a man to breed many such horses in his lifetime. Breeding, therefore, for this sport never has answered, and, I believe, never would, even if its palmy days had continued; but under the present system there is no doubt that little encouragement is afforded; and if a determination is arrived at to enter the arena, horses must be picked out from various sources and purchased. The Irish hunting mares seem capable of breeding useful animals of this class, and some of our best horses have been brought over from that country, got by Ishmael, Ratcatcher, Windfall, &c., out of the country dams. The latter horse seems to have been peculiarly lucky in his stock; the roomy and muscular proportions of the descendents of Comus and the stoutness of Beningbrough being well marked in them. No blood, however, has told more than that of Whalebone, as might have been expected from its well-known stoutness. Sir Peter Laurie, Simple Peter, Maurice Daley, Vainhope, Cogia, Lord George, The General, and many other celebrated winners, all descended from him or his brother Whisker; or, again, from his sire, Waxy, who was great-grandsire of that very wonderful horse, Chandler, and of Drayton, who got more first-rate steeplechasers than any other stallion of his day, being sire of Standard-Guard, Victim, and Bourton. He was by Muley, son of Orville, out of Prima Donna, by Soothsayer, grand-dam by Waxy, and was not successful on the flat, either in his own case or in that of his stock. On the other hand, the Selim blood, which is generally considered to be rather fast than stout, has been almost equally useful on the steeplechase-course—through Ishmael and Ratcatcher. In fact any first-rate racehorse, of stout blood and *with good shoulders*, seems to have succeeded occasionally in getting good steeplechase horses; but the essential point, which is printed in italics, is still more necessary on this kind of ground than on the flat. This subject, however, will be more fully considered under the general head of Breeding Horses, in which the various strains are analysed, and their relative value examined for all purposes connected with racing in its several forms.

Sect. 4.—Teaching the Steeplechaser.

Early Practice over the bar, as well as small fences, &c., is of great use to the steeplechaser; and without it most horses are a long time before they can keep their legs in a steeplechase. If, therefore, a colt bred for a hunter is supposed to be good enough for this purpose, he should be at once put to jump small obstacles while his breaking is being completed; but there are very few horses which will do more than clear comparatively small places in cold blood, and the stimulus of competition, especially with hounds, must be employed. Water-jumping is particularly disliked by most horses, and it should never be pressed, except with a good and sure leader; a refusal is never desirable, as the horse, finding out his power, is apt to repeat it in spite of the whip and spur. Wherever it is possible, the usual plan of riding young horses with hounds quietly, and by a good breaker, is the mode to be adopted; and generally a whole season must be employed in making them handy enough to commence a drill over the country, at the pace and in the style suitable for steeplechases.

In most of our steeplechase courses there is a water jump, often of no real

difficulty, in consequence of the sloping nature of the landing-side, but still of an apparent width sufficient to deter a horse from attempting it, unless he has been accustomed to water. A country should therefore be selected which is intersected by small brooks; and in fact every variety of fence, from the post-and-rail to the bullfinch, should be encountered at a time when the blood is up from the presence of a large field of horses. The essential requisite is a good rider, who will neither distress the colt nor allow him to refuse what he can easily accomplish; hence, he must be a good judge of condition and pace, for nothing disgusts a young horse more than to ride him at big places when he is tired.

It often happens that the colt-breaker is fond of the sport, and is inclined to persevere over a distance and at a pace which old and seasoned horses only are fit to encounter; and to guard against this the owner of the colt should always be ready to sacrifice his own place in the run, if he has the future success of his colt at heart. If he will not do this, he can scarcely expect the rider of his colt to do so; and the more exciting the run, the more he should be ready to forego it, knowing that the same temptation which makes it difficult for him to resist will operate in a like manner upon his breaker, if he is not prevented by the presence of his master. In this way I have known many good colts injured both in temper and in constitution. A hard run with hounds requires much more condition than a race, in order to avoid any ill consequences; and yet the colt is often expected by his breaker to carry him through it, at all events as far as he can raise a gallop. For these reasons, the plan of allowing the breaker to ride colts with hounds is not unattended with objections; but if a steady man can be found who, while he has the power of riding forward, has also the discretion to know when to stop, it is much the best mode of teaching the steeplechaser.

A little practice over a dozen fences, two or three times a week, with hounds, pulling up at the end of two or three miles, and not going too fast over that distance, is what is wanted; and when that course is pursued the colt leaves off each time with an appetite for more, and becomes every day fonder of the amusement. The kind of feeling which should be encouraged is that displayed when the horse is always keenly looking out for a fence to vault over, and the moment he has the opportunity will indulge his taste, taking the bit in his mouth, and going at his fence as fast as he is allowed. When this state of things is produced in the colt, and he is well practised at every variety of fence at a quiet pace, he may be ridden faster at them, and he will then gradually learn to measure his distance, and to take off so as to avoid over-jumping himself on the one hand, or falling by too slight an effort on the other. Much of this kind of practice may be carried out without hounds, for as soon as the habit of jumping everything as it comes is inculcated by example, the necessity for their presence is no longer felt, and any enclosed land, with suitable fences not too large, will answer the purpose. Two or three horses together will learn even here better than a single horse; and if they are to be had, with as many good riders, a kind of small steeplechase, without racing, may be ridden two or three times a week until the young horse, instead of getting over his fences in the style of a finished hunter, will learn to race at them and jump without the slightest pause, either beforehand or on landing in the next field.

The latter point is as necessary as the former; and the rider, if not a professed steeplechaser, should be aware of the necessity, and practise the style accordingly. It is astonishing what a difference exists in this respect between two horses which have been "made" on these different plans: one, a perfect hunter, goes steadily up to his fence, but dwells on each side of it, in order to measure his effort in the first place, and by nature in the second; the other, a finished steeplechaser, takes all his fences in his stride, and only increases his pace when the size of the next fence requires an extra effort, in which measure of his powers he is of course assisted by his rider. It is for this reason, and because few horses are ridden in this way till they are trained for this especial purpose, that so much time is required to make them perfect over a steeple-chase-course.

A young animal is much more easily taught his business than an old one, as whenever a style has been formed it

is much more difficult to get rid of it than it would have been to teach the opposite mode in an unbroken animal. The want of natural cleverness has much to do with it; but bad riding, and especially a slow style, has still more; and therefore the owner of a horse intended to win a steeplechase should be very careful in putting a rider upon his future winner. Few men but those accustomed to ride as regular jockeys are calculated to do justice to such a horse, and in every case some "professional" should be engaged for a few lessons, or, at all events, some one who thoroughly understands the business. There are many men of this class, throughout the best hunting countries, who are ready to ride young horses to hounds for a consideration; and at other times they may still more readily be had, because they can ride several horses a day without hounds; but with hounds the riding of one animal is the work of each day.

When lessons are to be given shortly before the steeplechase, and the actual rider is selected, it is better in all cases, if possible, to let him ride his horse two or three times. Few horses go alike on the road, and still fewer across country; in the same way almost every man has a peculiar style of his own; and, consequently, both horse and rider have to become acquainted with each other before they are at home, and often it is not until both are down, and out of the race, that they learn each other's bad qualities. It is far better therefore to allow them the opportunity beforehand, and the rider then has a chance of preventing those accidents which can be avoided by skill and care when they are known to be likely to occur. Thus, some horses over-jump themselves, and require very quiet riding; others, again, are apt to fall into the opposite extreme, and hit the top rail in timber, or the binders in a thorn fence, so hard as to endanger their footing; these require rousing at their fences, or, as the professionals say, "a deal of riding," especially as they are apt to hang about from one end to the other of the race in consequence of their dislike to the thing altogether. Yet these last are often the best steeplechasers; the worst being generally those which go off at score, and will jump everything before them a yard too high, till they beat themselves after which they can scarcely clear a straw. But either may be nursed and made more of by a competent pair of hands than by an awkward "yokel" who is only fit to drive the plough, or to ride the horses to water at a pond.

Sect. 5.—Training the Steeplechaser.

In Training this variety of the race-horse a long preparation is absolutely necessary, and it must be conducted upon principles somewhat different from that of the flat-racer. Much will depend upon the breeding of the animal, whether thorough-bred or half-bred, and whether stout or the reverse.

The Thorough-bred Steeplechaser is trained pretty nearly on the same principles as the flat-racer, as described in the sixth chapter of the last book, but with some alteration, as follows (I am here supposing that he is of stout blood, and that he will take as much work as such an animal ought, but if he is deficient in this respect, the following detailed rules will greatly exceed the mark, and must be modified accordingly):—His sweats should be from four to six miles long, but generally, unless he is very lusty, he will not want much clothing. One suit is almost always enough, and if the neck or shoulders, or any other part, wants a special sweating, clothes may be added to either or all for the express purpose. The general practice is to take a long time in the preparations, and to use a vast deal of walking exercise, with as little sweating work as will suffice to reduce the superfluous flesh, and to get the wind into good order. Speed must, to a certain extent, be sacrificed to lasting properties; and the walking exercise, therefore, is continued to such an extent as will insure the latter quality even though the former is somewhat abated. Short spirts, therefore, are not required; for the horse is seldom extended in the race until quite towards the finish; and even then more depends upon the lasting powers than upon the speed, as compared with what a horse can do when quite fresh. Consequently, all expedients for bringing out extreme speed for short distances are neglected, and the training is conducted so as to develop the general muscular powers, including that of the heart, which is the main agent in what is called a good wind. Less than three months from a

state of good hard keep, such as most horses are in when in a private stable, will scarcely serve to prepare a thoroughbred horse for a four-mile steeplechase; and even with that time in hand the animal ought to be in high health, full of hard flesh, and free from cough, humours, or other signs of disease.

His TRAINING should generally commence with a sweat, either clothed or otherwise, according to circumstances, followed by a dose of physic and a few days' rest. After this he may be given at least five or six hours' walking exercise per day, divided into two portions, and including a short canter or hand-gallop every day, or every other day, according as he seems to bear his walking. This may be continued for five or six weeks, with one, two, or three sweats during the time, according to circumstances; after which a second dose of physic, with mashes, &c., will form the division between the FIRST and SECOND PREPARATION, which latter will take about three weeks, and will be occupied by a little more galloping exercise, with an hour less per day of walking; and during the interval, one or two five or six-mile sweats, with or without clothing, but generally not allowing of that reducing expedient. Then another dose of physic, and the THIRD PREPARATION may commence.

This will require about three or four weeks; and very few horses indeed are at this time the better for clothed sweats. Supposing it to extend to four weeks, about two sweats will be necessary—namely, on the 10th and 20th or 21st day, having a clear interval of from eight to ten days before running. During the whole time, or at all events during the last two preparations, the horse should once a week be taken over three or four miles of such a country as he is likely to run over, or at least as near as can be obtained in the neighbourhood. He should, however, never be ridden over such fences as to try his utmost powers, but rather over a number of moderately small ones, so as to exercise those muscles which are particularly used in jumping, and more especially those of the shoulders and arms, which without this practice tire in the steeplechase long before those of the hind-quarter, because these last are equally employed in the ordinary gallop. This fact is well known to experienced trainers of this class of horse, and hence the success of certain parties who have united to their practical powers of riding the knowledge of the treatment of the horse which is required for training purposes. Many a good horse has been sent to a first-rate trainer for the flat, and from a neglect of this precaution has been sacrificed, whereas if his jumping muscles had all been trained as well as those engaged in galloping, he might very probably have been successful. It has been supposed, perhaps, that his training has been of a character to unfit him for the distance, and so sometimes it may; but more often the defeat has arisen from his being thrown out of cross-country work, with the result to which I have here alluded. Most regular trainers are well acquainted with the mode of bringing horses out for all distances over the flat, and therefore they would not neglect to do what is required for the purpose; but a great many are not aware of the necessity for this practice, and hence the unfortunate result which often attends their efforts. It is exactly as if a man were trained for rowing without putting an oar in his hands—that is, by walking and running alone, which would get his wind and general condition into a high state of fitness; but his arms, being untrained, would tire at the end of a very short distance.

This is an extreme illustration, no doubt, but it is merely an exaggeration of an evident truth; for there are some muscles about the horse's shoulders which are very slightly used in the gallop, and yet are essential to the recovery from the shock of coming down from a height, as in the ordinary jump of the steeplechaser. These muscles must be trained quite as much as the propellers, and, in default of such treatment as I have advised, the horse is almost sure to fail before he is half through his distance, as is so often seen in the steeplechaser. Any of the horses which come out would in all probability get over six times the number of fences without a fall if they were taken over them at various times, and when in an untired state; but from a failure in the muscular powers of either the hind or fore-quarter, a fall is the consequence. Now, if any one will watch for the cause of the falls which happen so frequently he will find that the vast

majority take place on the landing side, with symptoms not of want of power behind, but of a failure in getting away after the effort, which power evidently resides in the fore-quarter. The fore-feet seem to stick into the ground, whether it is sound or deep, and the horse falls over, making very often a somersault, and at other times going down without an effort, as if the shoulders and arms were perfectly paralyzed. Every one who has witnessed many steeplechases must have observed these facts, or will recall them to mind on having the attention drawn to them.

After the last sweat, as already described, a gallop may be given every other day, extending to about the distance to be run over, or a little farther, but without fences, for fear of accidents. Three or four hours a day will now suffice for walking exercise, and on the days intervening between the gallops a very short and quick spirt will serve to freshen the horse's wind, and to quicken his stride for the finish, if he should live to that part of the chase. The final means of bringing the horse to the post do not differ from those given in the sixth chapter of the previous book.

The Half-bred Steeplechaser (so called) is sometimes to all intents and purposes thorough-bred; that is, as far as regards the work he will do, and the general treatment which he requires. Many horses and mares which are not in the Stud-Book, from some slight defect in their pedigrees extending back several generations, are really capable of doing as much as a thorough-bred. Thus, for instance, supposing a mare, seven-eighths bred in the year 1825, were put to a thorough-bred horse, and her daughter, granddaughter, and great-granddaughter, were successively bred from thorough-bred horses, as has often happened, the resulting produce would still be "half-bred," in the language of the turf, although in reality he would only be stained in the proportion of 1 to 128.

It is said that these half-breds are inferior, because no animal so bred has ever won a great race over the flat; but it must be remembered that these mares are very seldom put to first-class stallions in succession, although now and then one may be indulged with an expensive leap. Now, if thorough-bred mares are treated in the same way, they will very seldom breed a first-class racehorse, and consequently the argument is at once upset, from a want of parallel *data* in the two cases. The very near success of Hotspur (*h.-b.*), some years ago, at Epsom, while unprepared, must also be remembered; and though it is not to be supposed that any amount of training would have placed him first, yet to run second for the Derby is no mean feat for a horse in the state he was in at the time. Now, such half-breds as Vainhope, Cogia, Tally-ho, or The Colonel, come within this description, and will often bear as much work and as severe a preparation as a West Australian or a Flying Dutchman. Nevertheless, it is notorious that, as a rule, half-bred horses, on the average, will not take anything like the amount of work without being overmarked, and that they must be very cautiously prepared for fear of this result. The same treatment which will improve the wind, pace, and general condition of the thorough-bred will make the horse of inferior caste stale, slow, and wasted: his muscles, instead of improving in size and power, are soft, flabby, and unstrung; his eye dull and heavy, and his appetite almost gone.

With these preliminary remarks, I will next proceed to the consideration of the time required to bring out a really half-bred horse in his best form for a four-mile steeplechase. It has been found by experience, that beyond two months or ten weeks very few of this class of horses will train on; and that all time and trouble in the world bestowed upon them, after that period has been well employed, are so much thrown away. I am now calculating, as before, from the state in which a healthy and sound horse is usually maintained in a private stable, and I believe that it is found that from that starting-point the above-mentioned number of weeks will be about the best average for the purpose. It is also frequently the case that these horses put up fat very fast, and would require such a quantity of fast work to get it off without clothing as would be too much for their powers of endurance; hence, they almost all must have sweating in clothes, and many of them pretty heavily during the winter, which is one reason why their training must not be continued

so long as that of the thorough-bred. The following is, I believe, the best average treatment of a good constitutioned horse of this class; but the varieties are more numerous even than with the pure racehorse, and will take even greater experience and tact to modify the treatment to suit each particular case. Here, more even than with the thorough-bred, is walking exercise the sheet-anchor; but even of this kind less work will suffice than with them. Taking nine weeks as the average duration of training, they may be divided into two preparations, as follows :—

The First Preparation of the half-bred will, as usual, be preceded by a dose of physic, after which the horse may be set to four or five hours a day walking exercise, half in the morning and the remainder in the afternoon, with a two-mile gallop every other day at a steady slow pace. At the end of a week a single slow gallop of three miles may be given, and after ten days the horse may sweat over five or six miles slowly and with plenty of clothes. If he does not carry flesh, he will of course not require clothes at all; and if only moderately fleshy he will only take a single sweater under his clothing; but, at all events, he must go his distance at a steady slow pace, and must be made to sweat more or less afterwards by clothing in the rubbing-house according to his state. After this sweat he will do nothing but take his usual walking exercise for a couple of days; then a three-mile slow gallop with a day of walking only, followed by another three-mile gallop; then a rest day as before, followed again by a gallop, longer or shorter, according to his appearance and progress; and finally, after another day of walking exercise alone, a second sweat, making in all about three weeks. After his second sweat a mash is ordered, to prepare for physic, which is given in the ordinary way, with the succeeding rest, and then this division of the training is completed. I should observe, however, that practice over a country, as already advised in page 505, is quite as needful for this class of horses as for those there described, and for precisely the same reasons. It may therefore be given on some of the days on which the three-mile gallops are ordered in their place, and for the same distance, or thereabouts.

The Second Preparation of the half-bred horse is a thorough test of the ability of the trainer, and it will generally require a vast amount of experience to do justice to a horse of this class in this stage of training. The sweats must still be continued, and may sometimes be slightly increased in pace towards the finish, but with the greatest possible caution. Slow work long continued is the great principle still to be followed out, but the degree in which it may be departed from with advantage cannot possibly be defined. Neither can the amount of galloping exercise be laid down with any certainty, nor the pace at which it can be borne; and all that can be said is, that a sweat every ten days, of the full length of five or six miles, with or without clothing, and with three or four-mile gallops on certain of the intervening days, is generally the rule. The cross-country practice is also continued up to the last sweat, but not after; and from that time the half-bred horse, in order to bring him out fresh, generally requires considerably lighter work than he has previously taken, and with less galloping than the thorough-bred on the days intervening between the sweat and the race. The only rule for the amount of work is the appearance, as tested by the hand and eye, and the appetite, which the groom can readily ascertain by the state of the manger. Half-bred horses are soon off their feed if over-done; and, what is worse still, they do not readily recover it. Hence this symptom must be watched with the greatest care and anxiety, and the work forthwith reduced on the slightest indication of its approach. Generally, however, a half-bred horse of good constitution will take two or even three pretty smart four-mile gallops after the sweat, going steadily for the first three miles and a half, and finishing with a tolerably quick pace, but not so as to extend and draw out the horse to his top speed. This in fact, if it can be helped, should never be done with the half-bred horse during the last preparation; and a trial for more than a mile or a mile and a half is not to be thought of. Indeed, private trials for steeplechases are utterly useless, and nothing but a real struggle across a country is of the slightest value as a test; because so much depends upon

the effects of the jumps, and also upon the staying powers at high speed, which must really never be called out during the training for fear of the consequences to the constitutional powers of the horse. On the last two days only short gallops of a mile and a half or two miles are to be allowed, and that on the last day but one should be a little brisker than usual, and should finish with a smart brushing gallop of half a mile's duration. The setting, feeding, &c., are all conducted as for the thorough-bred racehorse, except that in most cases a quartern of beans may be gradually added with advantage during the last preparation. In fixing the quantity of these the trainer will be guided by circumstances; but, generally speaking, during the winter season steeplechasers will bear them with advantage, and more especially half-bred horses, for the short time they are at work.

With these remarks I must conclude the subject of training the steeplechaser, which, although it most requires guidance, is least capable of receiving it. This is the case with the training of half-bred horses for all purposes, but more especially for such efforts as are called for in competing with thorough-bred horses over a distance of ground. It is here only in carrying weight and in jumping that the half-bred horse is superior to the thorough-bred; and if the latter is strong and clever enough for these purposes, he will, in nine cases out of ten, beat the former at even weights, especially if these are not higher than eleven or twelve stone. Hence it is that thorough-bred horses, or horses with a very slight stain, have been so generally introduced, and that the old-fashioned and really half-bred horse is quite neglected, if his rival can anyhow be obtained.

Sect. 6.—Steeplechase Riders.

Professional steeplechase riders form a class quite separate and distinct from the jockeys of the flat-race. They are very numerous, as shown by the published lists, and their fees are from 5*l.* upwards. The Regulations respecting gentlemen riders are now very strict, as will be seen by reference to No. 82 of the Laws of Steeplechasing.

Sect. 7.—Laws of Steeplechasing.

The Grand National Steeplechase Rules are, in fact, the laws of flat-racing modified to meet the difference of circumstances; and as, in many rules, the words are identical with those we have already given, we shall in such cases avoid needless repetition by simply referring to previous pages.

1. Racehorses take their ages from the 1st of January.

2. *Catch Weights.*—Catch weights are, each party to appoint a person to ride without weighing.

3. *Horses liable to carry extra Weight.*—The term "winning horse," in reference to those liable to carry extra weight, or those to be excluded from any race, shall apply only to winners of steeplechases in any country of 20 sovs. or upwards, not including the winner's stake, or of some prize of equal value, and not to the winners of hurdle-races, flat-races, or matches of any kind.

4. *Maiden Horses.*—A maiden horse or mare is considered one that has never won a steeplechase, hurdle-race, or hunter's race on the flat, in any country, of the value of 20 sovs. or upwards, not including the winner's stake; and a horse that has never started is one that has never started for a steeplechase, hurdle-race, or hunters' race on the flat in any country of the value of 20 sovs. or upwards, not including the winner's stake.

5 to 8. *Plates, Sweepstakes, and Post Matches.*—Page 474.

9. *Omission of Weight, how supplied.*—When any match or sweepstakes shall be made, and no weight mentioned, the horses shall carry 12st. 7lb. each, and, if any weight is given, the highest weight shall be 12st. 7lb.

10. *Omission of Course.*—When any match or sweepstakes shall be made and no course mentioned, the course shall be that which is usually run by horses of the same age as those engaged, viz.: If four yrs. old, 2½ miles; if five yrs. old, 3 miles; if six yrs. old or upwards, 4 miles. And if the horses should be of different ages, the course shall be fixed by the age of the youngest. No steeplechase shall be of less distance than 2 miles.

11. *Omission of Day.*—Page 474.

AS TO NOMINATIONS.

12. *Description necessary.*—In nominating a horse, gelding, or mare the first time for a steeplechase, its full pedigree must be given, if known, otherwise it shall be sufficient to state its age, colour, and the name in which it has and is hereafter to run, together with such description as will distinguish the animal from any other running in a similar name, either in flat-races, hurdle-races, or steeplechases.

13. *Change of Name.*—Should the name of any horse be changed after having been once entered in either a flat-race, hurdle-race, or steeplechase, it shall be necessary in all subsequent entries to state his original name as well as any other names under which he may previously have been entered, until it has been duly registered in the book of Steeplechases Past.

14. *When the Age must be mentioned.*—In naming for a race in which horses of different ages are admitted, the age of the horse named must be mentioned. No horse will be allowed to run under four years of age.

15. *Nomination of Foreign Horses.*—Page 474.

16. *Incorrect or Insufficient Description a Disqualification.*—Page 475.

17. *Fraudulent Entry a Perpetual Disqualification.*—Page 475.

18.—*Qualification Dates from Time of Closing.*—Page 475, adding: There shall be no restriction with regard to training stables in the conditions of any race.

19. *Nominations not to be Changed after Closing.*—Page 475.

20. *Exception to Preceding Rule.*—Page 475.

21. *Use of Fictitious Names.*—Every person who wishes to engage his horses in any other name than his own must assume some one other name, which must be registered *annually* at Messrs. Weatherby's Office. A fee of 5 guineas to the Grand National Hunt Fund must be paid at each time of registration, and he must run in that name only. No person to change his assumed name once registered, under a penalty of 10 sovs. to the same Fund.

The person registering the assumed name shall be considered in all respects as the owner of the horse entered in it, and in the event of the forfeit not being paid, his real name shall be published in the Forfeit List. No person shall register as an assumed name that of any person who runs his horses in his own name, or an assumed name previously adopted. Any horse running in any other name than that of his owner shall be disqualified, unless the name is registered as above.

This rule not to prevent a person who has subscribed to a stake from giving his nomination, provided the real or registered name of the owner appear in the entry.

Any horse leased or hired shall not be qualified to run in the name of the hirer for any steeplechase or hurdle-race, unless the person so hiring register the fact with Messrs. Weatherby before the date of entry, and furnish the name of the lessor, who at the time of hiring must, as well as the lessee, be qualified to enter and run. The lease not to be for any less time than one year, to entitle the hirer to the benefit of this rule, and the death of the lessor not to invalidate the entry.

Any person running a horse in contravention of this rule shall (at the discretion of the Grand National Hunt Committee) be disqualified from ever running a horse where these rules are in force, and a horse so entered shall be similarly disqualified.

22. *Nominations not required to be made on Sunday.*—Page 476.

23. *Void by Death.*—Page 476.

24. *Allowances to produce of Untried Horses or Mares.*—Page 476.

RESPECTING STAKES AND FORFEITS.

25 to 28. Same as 26 to 29, page 476.

29. *These Rules extend to Ireland.*—These rules, relative to arrears of stakes and forfeits due at Meetings under the Grand National Steeplechase Rules, apply to forfeits due at Meetings in Ireland run under the Irish National Steeplechase Rules.

30. *Defaulters for Bets Disqualified.*—No person convicted of any fraudulent practices on the turf, and no person that has been reported by the Committee of the Subscription Rooms at Newmarket or at Messrs. Tattersall's as being a defaulter in bets, shall be permitted to name, enter, or run, either in his own name or in that of any other person, any horse of which he is either wholly or in part owner, for any race whatever.

The penalties imposed by this rule, for defaults in bets, will not be enforced

unless the complaint shall have been lodged with the Committee of the Subscription Betting Rooms at Tattersall's or at Newmarket within three months of the bets being due.

31. No person convicted of malpractices by the Jockey Club of England or the racing or steeplechase authorities of Ireland, the British colonies, or any foreign country, will be permitted to enter, run, or ride any horse, and no horse disqualified by such authorities will be permitted to start at any Meeting where the Grand National Steeplechase Rules are in force.

THE FORFEIT LIST.

As in page 477, Rules 32 to 38.

WEIGHING.

As in page 478, Rules 39 and 40.

41. *Raising Weights in Handicaps.*—In all handicaps the lowest weight shall not be less than 13st., and when the highest weight accepting is under 12st. 7lb., it shall be raised to that weight, and the others in proportion; and in all handicaps where there is no acceptance, and the highest weight left in by 4 p.m. with the Clerk of the Course the day before running is under 12st. 7lb., it shall be raised to that weight, and the others in proportion.

42. *Scale of Weights.*—No horse shall carry less than 10st. in any race. The Committee recommend the following scale of weight-for-age, two miles and over. From the 1st of January to the 30th of June, both inclusive: four yrs. 10st. 3lb.; five yrs. 11st. 8lb.; six and aged, 12st. 3lb. From the 1st of July to the 31st of December, both inclusive: four yrs. 11st.; five yrs. 11st. 12lb.; six and aged, 12st. 3lb.

STARTING.

43 and 44. Same as 44 and 45, page 478, substituting Grand National Committee for Jockey Club.

45. *Foul Riding.* — The Stewards shall have power to disqualify any horse from being declared the winner of a steeplechase, although he should come in first, if it can be clearly proved to their satisfaction that the jockey, by any deliberate foul riding, intended to knock down any horse, or in any determined way jeopardise his chance of success in the race. The Stewards have the power to fine a jockey for this offence any sum not exceeding 50 sovs., or they may, at their discretion, submit the case to the Grand National Hunt Committee, who alone can suspend the jockey for life. In all cases the Stewards of a Meeting shall have the power of suspending the jockey until the expiration of the Meeting, or, if they should consider the case requires more severe punishment, until the case can be heard and decided by the G. N. H. Committee.

46. Horses running on the wrong side of a post and not turning back are disqualified.

SECOND HORSE.

47. *Money for Second Horse.* — Page 479.

DEAD HEATS.

48 to 50.—Same as 49 to 51, page 479.

51. *Walking Over.* — A walk over shall in no case be deemed necessary, either after a dead heat or otherwise. It shall be sufficient if a horse be weighed for, mounted, and proceed to the starting-post, when, if no competitor appear in due time, he shall be considered the winner of the race. Such horse shall be liable to carry extra weight as a winner.

HEATS.

52 to 58.—As in pages 479–80.

SELLING RACES.

59 to 63.—As in page 480.

EXTRA WEIGHT AND ALLOWANCES.

64. When it is a condition of any race that horses shall carry extra weight for winning a certain number of prizes during the year, such winning shall date from the 1st of October preceding, and shall extend to the time of starting, unless otherwise specified. There shall be no allowances of weight to half-bred horses. No penalty shall be inflicted for running second in any race, save and except that horses which have received 100 sovs. for being placed, may be debarred by the conditions of any particular race from receiving maiden allowances. There shall be no allowance to horses having been beaten. A horse which is entitled to an allowance of weight is disqualified in the event of his jockey neglecting to avail himself of that allowance without making a declaration of carrying overweight.

When any race is in dispute, both the horse that came in first and any horse claiming the race, shall be liable to all the penalties attaching to the

winner of that race till the matter is decided.

65 & 66. As in page 480, substituting "steeplechasing" for "flat-racing."

67. In races for gentlemen riders there shall be no penalties on gentlemen having ridden winners, or allowances for never having won.

68. A horse walking over or receiving forfeit, except for a match, is deemed a winner.

69. *Value of Prizes, how calculated.*—Page 481.

OBJECTIONS TO QUALIFICATION, &c.

70. *Examination of Mouth.*—Page 481.

71. *When Complaints must be made.*—Page 481.

72. *Presents to Judge, Starter, or Handicapper not allowed.*—Page 481, substituting "all courses" for "Newmarket."

73. Any rider in a steeplechase, where the ground is not flagged out, going upwards of 100 yards on any high road, lane, or public thoroughfare, will disqualify his horse from winning, although he should come in first.

74. Any rider in a steeplechase, where the ground is not flagged out, opening any gate or wicket, or passing through any gateway or common passage from one enclosure to another, will disqualify his horse from winning, although he should come in first.

75. *Remounting.*—Any horse getting away from his rider may be remounted in any part of the same field or enclosure in which the occurrence took place; but should such horse not be caught until he shall have entered another field, then he shall be ridden or brought back to the one in which he parted from his rider. Any jockey so losing his horse may be assisted in catching him and remounting him without risk of disqualification; and in the event of a rider being disabled, his horse may be ridden home by any person of sufficient weight, provided he be qualified according to the conditions of the race. No penalty shall be exacted for carrying over-weight in this instance.

76. *Postponement of Races.*—Should the weather or ground be in a doubtful state for running, it shall be left entirely to the Stewards, who may order the chase to be postponed for any time not later than the week following that for which it was originally fixed; and all nominations and subscriptions shall stand good, the same as if the chase had taken place on the day originally fixed.

77. *Flag Marks*—If any flag, post, or boundary mark be placed in the course—no matter by whose order—after the riders have been shown over the ground, or had the line of country pointed out or explained to them, it shall not be considered binding or of any effect unless such alteration or addition shall have been particularly named, previous to starting, to all the jockeys about to ride in the race, by one of the Stewards, the Clerk of the Course, or by their representatives.

78. If a horse refuse any fence in a steeplechase, and it can be proved, to the satisfaction of the Stewards, that he has been led over a fence by any of the bystanders, or has been given a lead over one by any horseman not riding in the race, the horse shall be disqualified from winning, although he should come in first.

79. *Hunters' Certificates.*—In all hunters' stakes a certificate from a Master of Hounds shall be required, and it shall be signed by a Master of Foxhounds or Staghounds, or by two gentlemen appointed by him who hunt regularly with his hounds, and it shall be lodged at Messrs. Weatherby's Office a clear week before the race in which the horse is intended to run, so as to admit of their being registered and published in the Calendar, with the name of the gentleman who signed. A fresh certificate shall be required after the 1st of January in each year, so that horses running in hunters' races up to the 31st of December may be qualified by certificates of the season finishing in the spring of the same year. A fee of 2*s.* 6*d.* to be charged for registration. The following Form of Certificate is that approved by the National Hunt Committee:—

"I hereby certify that
have seen Mr. 's b. g. or
ch. h., &c., hunted regularly
with the hounds during the
season."

Signed ... ...
Address ... ...
Date ... ...

80. No horse, though it has a hunting certificate, shall be qualified to run for hunters' races if, during the twelve

months previous to the day of entry, it shall have run in any country for a handicap, whether over a country or not, or for any race not confined to hunters, chargers, or yeomanry horses.

81. *Substitutes for Judge and Starter.*—Page 481, Rule 73.

82. *Qualifications for Gentlemen Riders.*—In all steeplechases advertised for gentlemen riders, the following qualifications will be necessary: That the riders should be members of one of the following clubs—The Jockey Club Croxton Park, Bibury, Brighton, and Ludlow Race Clubs; the New Rooms or Coffee Room at Newmarket; the Jockey Clubs of Paris, Berlin, and Vienna; the Army and Navy, Junior Army and Navy, Arthur's, Turf, Boodle's, Brookes's, Carlton, Junior Carlton, Guards', Pratt's Egerton, Pratt's, the Reform, Travellers', United Service, Junior United Service, White's, the Conservative, the Oxford and Cambridge, the Naval and Military, the Oriental, or the Arlington; the Kildare-street or Sackville-street Clubs in Dublin; the Western Meeting, Ayr, or the New Club, Edinbro'; or that they should be officers on full-pay in the army or navy, or persons holding commissions under the Crown, or bearing titles in their own right or by courtesy.

Persons not qualified as above, who wish to ride as gentlemen riders, may send in their names (one clear fortnight before the day of ballot) to Messrs. Weatherby's Office, proposed and seconded by members of the Committee, and the Committee will meet for the purpose of balloting at different times during the year, and each person elected will be charged one guinea, to go to the Grand National Hunt Fund. The list of gentlemen elected as gentlemen riders must be submitted annually to the Committee at the commencement of the season for re-election, and all gentlemen riders wishing to be re-elected must send in their names to Messrs. Weatherby accompanied by the fee of one guinea. The annual meeting on the second Monday in December is specially intended for this purpose.

But should any person who has been elected as a gentleman rider subsequently ride as a jockey, he shall thenceforth be disqualified as a gentlemen rider.

If any member of the Grand National Steeplechase Committee, or any gentleman elected as qualified to ride, should appear in the published Forfeit List as a defaulter for stakes or forfeits, or be reported by the Committee of the Subscription Rooms at Newmarket or at Messrs. Tattersall's as being a defaulter for bets lost on horse-racing, the Committee shall cause notice to be sent to him, that if his default be not cleared by a time to be stated in the said notice (not to exceed three months) his name will be erased from the list of members or of gentlemen qualified to ride; and if a member should be convicted of fraudulent practices on the turf, or should compound with his creditors, he shall cease to be a member of the Committee, and to be qualified to ride.

83. *Stewards' Decision final.*—The decision of the Stewards, or whomsoever they may appoint, is final in everything conected with steeplechases.

The Committee recommend that Clerks of Courses should write to each of their appointed Stewards, seven clear days before each meeting, requesting their attendance, or the appointment of substitutes to act as Stewards should they themselves be unable to attend.

84. No horse running at a meeting in Great Britain not advertised to be under the National Hunt Rules will be allowed to run at any meeting where the Grand National Rules are in force.

Sect. 8.—Steeplechase Courses.

With the exception of certain military and hunt steeplechases, of which latter the Grand National in England and the Punchestown in Ireland are the most prominent examples, all our chief steeplechases are now run at bastard meetings, partly composed of flat-races, and partly of steeplechases. The latter then generally commence and finish near the Grand Stand, and as much of the course as possible is within sight of those who pay for admittance. The proceedings in either case are under the control of stewards, &c.; but when the meeting is held over a natural country, they are seldom managed in the same regular way as on the flat. The riders are always shown the ground by a person appointed by the committee or stewards; and it is customary for all of the riders

to perambulate it on the morning of the race after the flags are up. This prevents any mistake, though, in spite of the precaution, such things do occur; and no wonder, when the intricate nature of some courses is taken into consideration. The weighing, starting, &c. are all conducted on the same principles as on the flat, but where the accommodation is improvised it is often done in a very rude and hasty manner.

THE COURSE IS MARKED OUT by flags, between two of which the horses must all go at certain points, so that, however winding the course, the riders may always find the two flags to go between. Sometimes one flag only is set up, which the riders are ordered to leave on the right or left; but this is always subject to mistakes, as these gentlemen are not, like recruits in the awkward squads, favoured with a hay-band on the one leg in order to distinguish the right from the left, and, consequently, they are not always able to remember at the moment which way to turn, and some, taking the wrong direction, are placed in a position which they can never recover. For this reason, then, I think the two flags ought always to be fixed. The fences vary much in different localities, both in number and in strength. At Liverpool they are still tolerably severe, but not what they used to be even there. At Worcester, Warwick, Leamington, and in fact most of the places where the race-course is the site of the *réunion*, the fences are small, and many of them artificial, being made of thorns and stakes, or sometimes only of hurdles dressed with furze. The ground chosen for the Grand National Hunt and Military Steeplechase has generally included some fair hunting fences and brooks of twelve or fourteen feet clear water, which is quite enough to test the merit of any hunter when extended, as he must be, in a race with a strong field against him. The number of fences altogether, including brooks, natural or artificial, will average about 32 in a four-mile steeplechase, and generally about 15 in one of two miles; the run-in being equally long in both cases.

THE STEEPLECHASE itself is certainly a beautiful sight, and if unattended by the numerous evils to which it is exposed, it might well challenge the admiration of all those who delight in that wonderfully graceful animal, the horse. To see twenty or thirty start across country, taking everything in their stride, and charging a brook or a bullfinch at the rate of 20 miles an hour, is a glorious sight indeed; and, I confess, it is one which has afforded me much gratification on many occasions. With regard to cruelty, I cannot see the objection on that score which many do; and, undoubtedly, in comparison with any of the sports included in the first part of this Manual, it is a most humane amusement. It should be recollected that the death of some animal, or often of hundreds, is the grand object of shooting, hunting, coursing, and fishing; then, with what consistency can an advocate of any of those sports throw stones at the steeplechaser because he occasionally, and by accident, does that which in the other case is the object of the sport? No one, for his own sake, would willingly break a horse's back, and therefore, though I should by all means avoid these accidents, I can see no cruelty in their occurrence; nor do I think that they ought to prevent the continuance of the amusement as a national sport, if it can be shown to be either useful, or even if it is not prejudicial. Under the circumstances which existed when this book was first written, I believed the sport to be injurious alike to the people and to the improvement of the horse, and there was no question in my mind as to the propriety of its discontinuance; but its laws have since been remodelled, and a check given to its evil practices, by the National Hunt Committee, and the sport may now be fairly compared with flat-racing in point of honesty—though it may be alleged that that is not giving it a particularly high character.

CHAPTER II.

HURDLE-RACING.

Sect. 1.—Objects of the Sport.

The Objects of hurdle-racing, in point of general utility, are difficult to discover, since it is attended with no good result that I am aware of, except affording amusement to the crowd, in which it does not seem to succeed to the same extent that it used to do. Formerly it was a very common adjunct to ordinary country race meetings, but since the very general introduction of steeplechases it has lost its attractions, and an advertised hurdle-race seldom commands a good entry, except at the same time with a steeplechase, nor does it draw a crowd. No purpose, therefore, for which races are established is answered, and the consequence is that hurdle-races are very generally abandoned. The hardness of the ground is a great drawback during the summer season, and a horse meeting with a fall not only shakes himself sadly, but often damages his rider, and broken collar-bones or arms or thighs are the frequent attendants upon these amusements. Generally these races are for two miles, over six hurdles, and these last are almost always frail affairs, and easily galloped through; so that the jump is an apology for what it is intended to represent, and frequently the hurdle is knocked down by the first horse, thus letting all the others through without an effort.

Sect. 2.—Horses Used.

Worn-out Racers, or those which are not fast enough for flat-races, are generally condemned to finish their career over hurdles, where their greater quickness in jumping sometimes makes them more successful than over the flat. But almost always horses are used which are quite, or very nearly, thorough-bred; and the less they jump the better, provided only that they do not lose their stride, and manage somehow to get over or through the hurdles without loss of pace. If a horse dwells at his hurdle, he not only loses time, but he loses power in stopping himself first, and then in starting afresh, so that it is very seldom that such a horse is successful; though there have been some instances of hurdle-racers which would do this at every hurdle but the last, and yet could manage to win—as, for instance, Mr. Ekin's Duenna, a great winner about five and twenty years ago.

Sect. 3.—Training, &c.

The Training for hurdle-races is exactly the same as for flat-races, except that an occasional practice over hurdles is necessary; but if the horse will take them kindly without either refusing them or over-jumping himself, he may be considered perfect, and be trained as for an ordinary flat-race. When once he is sufficiently practised he should not be disgusted with the amusement, and should seldom be taken over any kind of fence or hard ground, which few horses like, and which always does more or less harm, from shaking the joints or injuring the feet. In teaching to jump hurdles a leader should always be first sent over them, as without a little excitement of this kind few horses will either take to jump, or, when perfect, go at them without reluctance. Over-jumping is worse than the reverse in the race itself, though it is generally to be cured by practice; but as it takes too much out of a horse for him to be able to exert himself fully afterwards, it is fatal to the result of the race. Until, therefore, the horse will just clear his hurdles (and if he raps them a little so much the better), he is not fit for hurdle-racing. Subject to this difference—that is, as relates to the jumping—the trials, &c., should be exactly the same as laid down in the sixth chapter of the last book.

Sect. 4.—The Weights, Jockeys, and Courses.

The Weights for hurdle-races were, until lately, almost always according to age; but now, in accordance with the prevailing fashion, handicap weights have generally been adopted. The same objection applies to them in this

section of the turf as to the corresponding kind of weights in flat-racing, to which I have already alluded.

THE COURSE is almost in every case some established race-course, and in the summer invariably so. When hurdle-racing is made an adjunct to steeplechasing it is only when the latter is held at some regular race-course, upon which the hurdles are fixed, as at Liverpool, Hereford, Worcester, &c.

THE JOCKEYS for hurdle-racing are sometimes steeplechase riders, and at others the inferior grade of flat-race jockeys.

SECT. 5.—LAWS.

THE LAWS OF HURDLE-RACING are the same as those of steeplechasing, except that the following are substituted for Nos. 3 and 4, and the last paragraphs of 10 and 14 :—

1. The term "winning horse" with reference to those liable to carry extra weight, or to be excluded from any race, shall apply only to winners of Hurdle Races value 20*l.* and upwards, not including the winner's own stake.

2. A maiden horse is one that has never won a Hurdle Race in any country of the value of 20*l.*, not including the winner's own stake.

3. No three years old can run for any hurdle-race before the 1st of September

4. No hurdle-race shall be of less than one mile and a-half in extent, or over less than six flights of hurdles, and in all longer races there shall be an additional flight of hurdles in each quarter of a mile or part of one.

FOR HUNTERS' RACES ON THE FLAT the laws are the same as for steeplechases, with the following exceptional and additional rules :—

1. Horses in hunters' races must be ridden by persons who have never ridden for hire.

2. No horse to carry less than 11st.

The Committee recommend the following as a scale of weight for age, two miles :—From the 1st of January to the 30th of June, inclusive : four yrs. 11st. 7lb. ; five yrs. 12st. 3lb. ; six and aged, 12st. 7lb. From the 1st of July to the 31st of December, inclusive : four yrs. 12st. ; five yrs. 12st. 5lb. ; six and aged, 12st. 7lb.

3. For hunters' races on the flat the term "winning horse" shall apply to winners of flat-races, steeplechases, or hurdle-races in any country of 20 sovs. value or upwards, and maiden horses are those that never won a flat-race, steeplechase, or hurdle-race value 20 sovs. in any country.

THE WEIGHT-CARRYING HUNTER.

PART II.

HORSE-RACING.

BOOK III.—RIDING TO HOUNDS.

CHAP. I.
THE ESSENTIALS.

Sect. 1.—General Remarks.

Riding to Hounds, as I have before observed, is often confounded with hunting; and in the present day it well may be, since there are very few who indulge in the latter, while almost every man who hunts may be said to ride to hounds. The whole affair is a race; first between the hounds themselves; and secondly, among the field, who vie with one another in a way which often spoils the sport, from the over-riding of the scent in the ardour of the contest. Riding to hounds is carried on in such a systematic way that it must be investigated in the same spirit; and when it is considered that probably 20,000 hunters are kept in Great Britain and Ireland for this purpose alone, it may well encourage one to go fully into the subject, since its interest must be proportionate to the extent of the circle of those who indulge in it. The only requisite for this amusement, over and above the hounds, which have been fully entered upon in the chapters on Hunting, is the hunter, which may be either the thorough-bred or the ordinary half-bred hunter, or the weight-carrying hunter, each of which will form a separate subject of consideration.

Sect. 2.—The Hunter.

The Thorough-bred Hunter comes first under examination, as being the most valuable, according to the Hudibrastic definition. No doubt hunters of pure blood, if perfect and up to great weight, are very scarce; and being from this cause very fashionable, they are only to be obtained by paying high sums for them. But the full-bred hunter requires not only this purity of blood, the effect of which is to give

him good wind and bottom, but he must also have liberty of action and general cleverness, in order to enable him to perform the various feats which a clever hunter should be capable of. There is no difficulty in procuring horses of this class high enough from the ground; and many are seen measuring 17 hands high, or even more; the real difficulty is experienced in procuring them near enough to the ground, and with "as little daylight as possible" under them. This sporting term is very expressive, marking the conformation which is most rare, and yet most valuable in this class of horses; a half-bred hunter may easily be too thick and stumpy, but it is seldom that this is the case with the thorough-bred horse. The same applies to the racehorse, which, as I have before remarked, may be too bulky and round in his ribs, so as to carry too much weight for his legs, and to be slower than he is required to be for his particular purpose; but the thorough-bred hunter (if made in proportion) can scarcely be too strong and thick; remembering always that the legs must be bony and strong, to carry this weight and the correspondingly heavy rider.

It will be allowed by everybody that no horse can suit the purposes we are now considering better than one in which all the following essentials are combined—viz.: first, pure blood; secondly, a strong, low, muscular, and bony frame; thirdly, quickness and cleverness; and fourthly, a tractable temper, in order that all the first three qualities may be applicable to the purposes of the owner. If, therefore, a thorough-bred horse can be obtained with all these requisites, and also sound in constitution and in limb, he is undoubtedly a prize worth having, and a large sum may well be invested in his purchase by any person who can afford the outlay. Who would not ride such horses as Rat-trap, the Switcher, Sir Peter Laurie, &c., if they could get them well broken and steady with hounds? All these here mentioned, and many others well known on the steeplechase course and in the hunting-field, are capable of carrying 15st. with any hounds. The strongest hunter I have ever seen of this class is one which was expressly bred to win the Derby, and was reared and trained for that purpose. He was fully 17 hands high, yet on short legs, with the bone and substance of a dray-horse, or nearly so. Unfortunately he turned out a "whistler," and he was also too slow for racing; but he was a first-rate hunter, capable of carrying 17st., and actually going to hounds very forward under that weight. He was by Harkaway, who, from his Eclipse blood and the large infusion which he had of that of Herod, was admirably calculated to get weight-carrying hunters.

Such horses, however, are very rare; and, as I said before, are only to be obtained for long prices. It is no wonder therefore that fault should be found with our cavalry horses, as being incapable of standing fatigue and hardship under 18st., when it is known that our best hunters are scarcely capable of carrying a stone less weight. The sum until lately paid for cavalry troop-horses was only 24*l.*, whilst to horse a regiment in perfection at least 100*l.* a head must be forthcoming. Pure-bred horses, therefore, are out of the question for that purpose, and must still be confined to the race-course and to the stables of the wealthy, when required to carry heavy weights. A hunter up to 11st., or even 12st., may easily be obtained thorough-bred, and numbers of such, too slow for racing, are sold every year. Unfortunately, however, the bulk of them are injured either in legs, feet, temper, or action, by the training they have endured; and for this reason scarcely 10 per cent. are really fit for riding to hounds. No one likes to ride a horse which will bite or kick, or rear or plunge, or pull to the very verge of running away; and yet these qualities are so constantly met with as the result of training, that the purchaser always looks out for some one or more of them in every horse which has been in a trainer's hands. Besides these faults of temper, there is another, depending upon the peculiar education for the turf—viz., the daisy-cutting style of gallop which most trained race-horses exhibit, and the want of "setting on their haunches." A hunter should be almost able to walk on his hind-legs alone, and for this purpose he should, in his breaking, be pulled very much more upon his hind-legs than is the case with the racer. I do not mean that this should be to the same extent as for cavalry purposes, but that it should be sufficient to enable the hunter

to balance himself upon his hind-legs in getting to his fence when anything is to be done in a quiet and creeping style, such as every perfect hunter ought to be accomplished in. Nothing is more useless than a weedy or bad-tempered hunter, whether thorough-bred or not; and a half-bred horse of good substance and temper is always preferable to one of pure blood inferior in these particulars. There is no medium in him, and he is either worth his weight in silver, or else he is not worth his corn. The feet of the thorough-bred horse are too small for going well in deep ground, which requires a foot of some size to keep it from sinking into the soft and yielding soil. This is a point of some importance, and I believe it will be found that most horses "good in dirt" have moderately large feet.

The Ordinary Hunter, of impure blood, comprehends every variety embraced between the one above described and the heavy machiner; but I am now considering those only which are capable of carrying 14st. to any hounds. His best qualities are, his tractability, cleverness, and hardy constitution; all of which may be found in this class to greater perfection than in the one I have just been considering; and, as a matter of course, every individual is expected to combine all these in a tolerable state of development. There can be little doubt that hunters of this breed, as a class, excel in jumping all kinds of fences, which they get over either standing or flying, as their education has taught them, or, in thoroughly made hunters, at the will of their riders. These horses will cover an enormous width as well as height; and it is said that a fence at St. Albans, seven feet high, was cleared without touching by Moonraker, in 1832; but there is no record of any wall or piece of timber higher than six feet having been cleared. The widths of thirty-nine and thirty-four feet have been cleared respectively by Chandler and Vainhope; but they can scarcely be classed with half-bred hunters; both however being sufficiently stained to write *h.-b.* to their names. There can be no question that in jumping heights the thorough-bred is beaten by his impure competitor; but in width he will bear the palm, as might be expected from his greater speed and length of stride. Twenty feet are often compassed in each stride of the extended gallop of the race-horse, and he has consequently only to increase this pace one-half in order to cover a width of thirty feet; whilst an addition of three-quarters would make a leap exceeding Vainhope's by one foot. Thus the advantages, even in point of jumping, are more evenly balanced than is generally supposed; and if the thorough-bred horse is broken expressly for this purpose, and set upon his haunches, he will do all that a horse can do; but as he is generally bitted on a very different plan, and is also made hot and vicious by the high feeding and general management of the training-stable, he is practically in these points inferior; and the half-bred hunter may be said, without fear of contradiction, to be A 1 in all the above particulars, taking him on the average—good, bad, and indifferent being classed together. Every year, however, our hunters are better bred, and more capable of competing in lasting qualities and pace with their more aristocratic companions; and very shortly we may expect to see the thorough-bred horse generally beaten in the hunting-field by horses to all practical intents as highly bred, though possessing a stain many generations back, but expressly reared and broken for hunting alone. At present such is not the case, because all our breeders endeavour to combine the two objects by selecting blood which will possibly turn out a Derby horse among a large number, and thus preferring the chance of one large prize, instead of endeavouring to obtain a number of small prizes. This subject, however, will be more advantageously considered under the general head of "Breeding," which is hereafter treated of.

With regard to the best conformation for this description of hunter, it must depend very much upon the weight he is intended to carry. If this is under 14st., the hunter may resemble as closely as possible the thorough-bred horse, being in fact in almost all cases at least seven-eighths of his blood. Lightness of head and neck is not quite of as much importance as on the turf, but still it is very desirable; a very neat small head is, however, to be passed by in favour of a bolder and fuller head, with great width and general roominess of skull, so as to

contain a very full volume of brain. This is necessary for the sake of giving that high intelligence which the hunter requires. He should never be a fool, or he will bemire his rider; and the more knowledge he gains by experience the better he will perform. There are some horses which never make a mistake, unless they are cruelly over-ridden either in point of distance, or size of fences; and yet they may not have more action than others which are constantly getting themselves and their riders into trouble. I recollect seeing a black mare in Worcestershire, four years old, go through a long run without a single mistake, although it was her first appearance with hounds; in fact, she had only just been broken in; but she had the most intelligent countenance in the world, with a full-sized skull, and an eye which could almost speak. She was sold for 150*l.*, to go into Leicestershire, though scarcely up to 12st. Now, it may be said that she was a "natural hunter;" and so she was; but why? because she was clever enough to understand at once what was to be done, and how to do it. All horses with good brains and tempers, if also accompanied by good action and sufficient power, make good hunters at once; whilst dull, stupid horses, or rampant fiery ones, which will not look where they are going, are only made into hunters by the long-continued efforts of rough-riders, and the imminent risk of life and limb.

THE WEIGHT-CARRYING HUNTER is very rarely of pure Eastern blood—that is to say, that the thorough-bred horse is seldom capable of carrying more than 14st. across country. Some rare exceptions occur, and I have instanced one in a previous paragraph. It is not that a thorough-bred horse will not beat a slow, thick-made, weight-carrying hunter across country, each carrying 16st.; for it is well known that he will, if he has only strength to lift it; but in practice it is found that his joints and sinews are too small to stand the strains incidental to the carrying of this weight. An extraordinary instance of the disparity between horses of these two classes was exhibited some years ago, in which a thorough-bred horse, without any pretension to racing powers, and a good, useful, and well-bred, weight-carrying hunter, were matched to run four miles, each under 13st. 7lb.—Oliver and Parker up. The country chosen was not very severe, but quite enough so to test the qualities of the horses. The result was, that the half-bred could never make the other gallop; and in spite of *dropping his weights, and going back to pick them up* some three or four hundred yards, Oliver only came in a short distance behind the stronger, but slower, horse. The whole scene was an absurdity, if nothing worse; but it plainly exhibited the superior qualities of the thorough-bred horse for a single fly across country under weight. But if the same two horses were to be ridden twice a week to hounds for a few months by two 14st. men, the one would be just as fresh at the end as at the beginning, whilst the other would be lame and knocked to pieces, if he had not been obliged to stop long before. If, therefore, the man of this weight wishes to be mounted on thorough-breds, he must at least double the number of his stud, as he will find that they will be much more frequently lame than the larger-limbed half-bred horse. But that they will do more in the single day is undoubted; and though in fast countries a second horse is wanted even for the light weights, yet he is not wanted nearly so much when a thorough-bred hunter is employed as in the case of a commoner horse. The outlay for 16st. horses is in any case great; for, of course, it is understood that they must have pace, and it is almost as difficult to meet with a fast low-bred horse as with a strong thorough-bred one. Few really half-bred horses, framed like a thorough-bred, can carry this weight; and unless of pure blood, or very nearly so, they must be of a frame which is generally too stout and thick for great speed. The sketch which heads this article exhibits the perfection of form in the horse of this class; he is what the dealers call "a little big un'," that is to say, a strong low horse, appearing less than he really is, because his proportions are so good as to deceive the eye. It is always a good sign when a horse, or any other animal, measures more than he looks; it is invariably caused by such an exact proportion of parts to one another as leaves no point for the eye to dwell upon. When such a horse is seen with a head, neck, and shoulders like this sketch, he may be considered

a rarity; and if he can go a good pace, and knows his business as a hunter, less than 350 guineas ought not to buy him; and any much larger sum I consider a fancy price, only put on to please those who are not contented unless they use an article obtained at a cost beyond the reach of ordinary men.

The neat head and neck are points that are chiefly to be desired for the sake of their beauty, but the sloping, yet powerful shoulders, the strong and wide hips, with a back like a feather-bed, are essential to the weight-carrier. Such horses ought also to have their thighs and gaskins very strongly developed, so that on raising their tails these parts are seen to touch one another below the level of the stifle-joint, and in fact more than half-way down from the root of the tail to the hocks. The muscles of the thighs on the outside ought also to extend considerably beyond the level of the hips, unless these are very ragged, when this will seldom be the case. Hips of this description are not pleasing to the eye, until by experience their utility is discovered; but the horseman of long standing generally comes to the conclusion that "handsome is that handsome does," and in the hunting-field the truth of this proverb is generally recognised. In Hyde Park much is sacrificed to appearances, which are made the first consideration; not because the frequenters of that arena are bad judges, for the reverse is the case, but because there is no test of quality except of action, which is exhibited there in full perfection. But in the hunting-field competition is the order of the day, and the horse that can beat all his competitors is the most valued, even though as plain as a cab-horse. Nevertheless, if he is "a good un' to go," he is not the less prized because he is *not* a "rum un' to look at;" and if beauty and goodness can be combined so much the better; and so much the dearer is the horse combining them.

Large, bony, and strong hocks must be possessed by these horses, both for giving power and standing work; curbs, spavins, thorough-pins, must be carefully avoided, especially the first, which in carrying weight are almost sure to give way again, even if they have been once cured. The fetlock-joints should be strong, and the bones short but not stumpy; this applies to both fore and hind-legs. The knees must be especially looked to, as they are very apt to give way under weight; they should be wide and large, with the bony point behind well developed, and the leg set on straight with the arm, or, if anything, with the knee slightly bent forward; nothing is worse than the calf-knee in this class of horses, because in the drop from the leap the strain on the ligaments is not enough assisted by the muscles, which, by the extension of the limb beyond the straight line, lose a large proportion of their power. Practically, therefore (as well as theoretically), it is found that these knees are unsuited to the hunting-field, and should be avoided most carefully for carrying weight, though for less than 12st. they may often suffice. On the other hand, some of the best hunters in the world have the knee forward, although this particular formation is considered objectionable by some; as, for instance, by Cecil, in his additions to "The Horse." He there adduces the descendants of Penelope as likely to be bad hunters, from their inheriting from her this formation of the leg; yet it is notorious that a very large proportion of our best hunters and steeplechasers are descended from her, either through Whisker or Whalebone, her sons. The Colonel, son of Whisker, and therefore her grandson, though not remarkable for getting good racehorses, yet was the sire of a vast number of first-class hunters, in many of which this peculiarity existed, and, I believe, to their great advantage. Nimrod, also, a son of Whalebone, got a great number of extraordinary weight-carrying hunters, in almost all of whom this peculiar formation of the knee was very evident; yet they all stood their work well, and I never saw a hunter by Nimrod with really worn-out fore-legs, though often much over at the knee. But they all had good tendons and suspensory ligaments, and these are the really important parts upon which the wear and tear of the hunter's legs actually depend, when united with joints of good size, and furnished with strong lateral ligaments. The same applies to the stock of Sir Hercules, Defence, Safeguard, Combat, and the Saddler, all descended from her, though not all exhibiting this peculiarity. On

the road it sometimes leads to a trembling of the knee, as the result of hard battering, and is, therefore, perhaps objectionable for that kind of work; but for racing, whether on the flat, in the steeplechase, or to hounds, it is rather a good point than otherwise in my opinion, and in that of every good judge with whom I am acquainted. I have made these remarks not in disparagement of Cecil's labours, but because in such an important feature as this, which may easily mislead the young rider of 16st. weight, it is right that the truth should be stated if it can be arrived at; and this I am persuaded will be found on the side I am now espousing, with regard to the formation of the fore-leg. The feet of the weight-carrying hunter ought to be tolerably large, but not flat-soled, which latter formation will make him unfit for going over hard ground, just as a small contracted foot allows him to sink into "dirt," and renders him unable to carry his rider through it.

When all these parts are met with in a horse of good temper, that will not fret himself with hounds, and has a good mouth, he is that rare animal—"a perfect hunter up to 16st." Beyond this weight a horse suited to it must be a dray-horse in form; and though he may carry his rider to hounds, yet it must of necessity be "*longo intervallo*." No horse that ever ran can do more, if hounds are going a good pace over a grass country. It is wonderful what some men of 18st. will do with hounds, yet it is only by a knowledge of country and good luck that it is done, and not by fair straightforward riding. Occasionally a cart-horse in make, but with tolerably clean legs, is met with capable of going a fair pace, and clever enough to get over his fences by creeping or jumping on and off, &c.; and such a horse will carry even 20st. to hounds; indeed, I remember a mare which, to my knowledge, carried a man who rode 20st. 7lbs. over a brook at least 14 feet from bank to bank, and in the end of a run of six or seven miles, but, as may be supposed, not a very fast one. She was well bred, but very strong and carty; and she could go a wonderful pace for her shape, and considering the weight she carried. This mare bred a succession of colts, all of which fetched high prices.

Sect. 3.—Saddlery.

The Saddle necessary for riding to hounds should be of the very best quality, inasmuch as it is severely tested in the numerous adventures by flood and field to which it is subjected. A bad saddle is at once spoiled by an immersion in a brook, while a good one comes out none the worse. The horse's back also has to bear the weight of his rider often from eight in the morning till six at night; and if the saddle does not fit, or is badly made, the result is a sore back. In all cases this article should be large and roomy; and nothing is gained by the heavy man ordering a 10lb. saddle, in the hope of reducing his weight 4lb. On the contrary, his horse is the sufferer by this fancied advantage, because the weight is not distributed over a sufficient surface, and consequently cuts his skin, and tires those muscles upon which it rests. No saddle should be cramped in size if it is intended to be long on the horse's back, and hence the hunting-saddle, of all others, should not be shorn of its fair proportions. That intended for the steeplechase may well be reduced, even to 7lb., because it is not long on; but here, as the reverse is the case, the light one is quite inapplicable. It is true that a first-rate saddler will turn out a wonderfully useful 10lb. saddle for a 12st. man; but for a man of 16 or 18st. it is too small, and the tree itself too weak to support the great weight it has to carry without giving way when dropping from a height. Whenever I have known the attempt made the result has been a sore back; and I am persuaded that the heavy man must have a good roomy saddle of 14lb. if the comfort of his horse is to be considered; and that with such an article he will be better carried throughout a season than with the most wonderfully light one which was ever turned out of a London saddler's shop. In "the Shires" it is the fashion to use unstuffed flaps, which are believed to allow the rider to fall farther away from his horse when a mistake is made, but I doubt their value in this respect.

Numberless inventions have been brought out at various times for the prevention of accidents arising from dragging the foot in the stirrup, but these are now all superseded by the introduction of the Spring-bar to

which the stirrup-leather is attached, and which easily allows this part of the saddle, with the foot in the stirrup, to be set at liberty the moment the rider is hung by it. If, however, these spring-bars are neglected and suffered to get rusty, they refuse to act when wanted, and the result is often fatal to the rider. The good groom always removes the stirrup-leathers after hunting, and in so doing, for his own sake, keeps the bars well oiled. A PLAIN JOINTED STIRRUP was much used thirty years ago, and is still more effectual, because the foot cannot possibly be retained in it; but such reliance is now placed on the spring-bars that all other expedients are neglected as supererogatory. THE GIRTHS should be strong, and not worn too long, as they are apt to break and cause a severe accident. The rider generally buckles his girths up tightly just before the hounds are thrown into covert, and, if immediately excited by "a find," the horse sometimes bursts them by the long inspiration which he usually makes at that time.

IN BRIDLES, again, there is a great necessity for good workmanship and materials, not only in the leather but in the bits, which sometimes have been known to break, to the imminent danger of the rider of a pulling-horse. There is a great difference of opinion among hunting men as to the relative value of the SNAFFLE and the DOUBLE-BRIDLE, consisting of the snaffle and curb together in the mouth, or of a combination of the two in one bit, as seen in the Pelham, the Hanoverian Pelham, &c. &c. It is contended, on the one hand, that a horse never requires a curb at his fences, and that the mere presence of one in his mouth makes him go badly at them; but this latter assertion is, I think, overdrawn; and though there can be no doubt that a strong man, with light hands, on the average of horses, will go well with a snaffle, yet when his horse gets tired and wants collecting, as in deep ground will often happen, he would generally be glad of the surfaces of his curb. Some men, however, are so strong as to be able to do this with the snaffle; but few have the power necessary; and many are, by the time their horses want assistance, themselves too exhausted to afford assistance, except with a more powerful bit than the one which they have used with comfort when quite fresh. For those who ride with a loose rein the snaffle is quite sufficient, because they never use it except to guide the horse, and as it lies idle when going straight it does not make the mouth dull, and will fully answer the purpose to which it is applied, without the extra weight and annoyance of the curb. As far as my own experience goes, I have never yet ridden a snaffle-bridled horse comfortably, *through a run*, though I have had one or two which were very pleasant for a few miles, but the time has always come when I wanted to collect them after being pumped out, or when it was desirable to stop them in a short compass to avoid accidents. On one occasion I was nearly meeting with an accident from riding a young horse with a snaffle, which always made me careful of such a thing again. We had found a fox, and taken him over a very steep hill, which I, being a light-weight, had got up very quickly, but not without ruffling the temper of my horse, a young but clever hunter. On the top of the hill we were detained some few minutes, from the hounds checking in a small covert on the side, and we were uncertain which way to go; but no sooner did they begin to take such a line as to induce me to turn my horse's head towards the brow, than he started off with me at a pace which would have carried us both very rapidly into the next world; and I only saved the danger by riding him round and round the small table-land at the top until I could master him, and go tolerably quietly down. Yet his mouth was so tender that a snaffle in the ordinary way could scarcely be borne; and even when going his three-quarter pace he would not pull an ounce; but he was so excited by the struggle uphill, and so refreshed by the breeze on the top, that the fresh start took away all control over his feelings, and the bit was of no use at all. From that day I have never ridden a hunter in a plain snaffle, nor would I ever do it again, with a hill within reach. There is generally scope enough on a flat surface, but even there it sometimes happens that a gravel-pit, or a drop of some kind, is caught sight of just in time to avoid it, if the horse is suddenly checked; and it is in such cases that a sharper control is required than

is afforded by the bit *in common use*, whatever that may be. The curb should be seldom used, but the less frequently it is employed the more usefully it acts when really wanted. Hence, my verdict, as may be gathered from the preceding observations, is in favour of the double-bridle, consisting of the snaffle and curb.

THE PLAIN PELHAM is a useful bit for light-mouthed horses; but it does not sit prettily in the mouth, and shows off a head badly; on large heads it is peculiarly unsightly, and more especially when the jaw is coarse. The curb-rein of this bit does not act with the same power as that of the ordinary curb with a port on the mouthpiece, but quite as much so as the straight one. THE HANOVERIAN PELHAM is a very useful and powerful bit for hard-mouthed horses, and makes a very effectual hunting-bit for such animals.

With decided pullers nothing acts so well as the BUCEPHALUS NOSEBAND, which keeps the mouth shut whilst it may also be made to compress the nostrils, and thus stop the horse for want of wind. Its chief use, however, is in keeping the mouth shut, and thus enabling the port of the mouthpiece to act against the palate, which it cannot do in an open mouth. It is a very simple and ingenious invention, and I have ridden tremendous pullers with it in comparative comfort; but it requires good hands, without which it injures the jaw to a serious extent, even so far as to produce caries.

THE GAG SNAFFLE is likewise a very useful adjunct with pullers that get their heads down; it may either be employed without an ordinary snaffle, and with the addition of the curb-bit and rein, or with the former instead of the latter added to it. There is this advantage attending its use, that if the horse does not pull it is not more severe than a common snaffle; but if he does, it acts with double power, owing to the pulley-like attachment to the rein, and to its drawing against the angle of the mouth, in a situation rather above the usual seat of the bit. In every way, therefore, it acts well with a boring horse, and may often be employed in the hunting-field with advantage.

The above are all the varieties of bridles which will be useful, and I may here enumerate them as follows—viz., first, the snaffle, plain or twisted, large or small, usually called the single-reined bridle; secondly, the common double-reined bridle, consisting of a snaffle of either of the above kinds, with a curb of varying power, which resides in the cheek and mouthpiece, the comparative length of cheek and the height of the port being the indices of this quality; thirdly, the common Pelham, combining the above two in one bit of ordinary power; fourthly, the Hanoverian Pelham, on somewhat the same principle, but much more powerful from having a high port and longer cheeks; and fifthly, the gag-snaffle, introduced into the mouth, either with or without the aid of a curb or common snaffle, and chiefly useful in horses which get their heads down too low in their gallops, or obstinate kickers, to keep their heads up.

THE BREAST-PLATE is intended to prevent that awkward accident, which I have many times seen occur from the want of it—namely, the slipping back of the saddle in going up a steep hill, especially towards the end of a long day. The girths, which were tight enough in the morning, have then become slack, and the saddle slips back, sometimes completely over the tail, the remedy being that which "Johnny Gilpins" only are at other times inclined to adopt—namely, a close em brace of the horse's neck. It is dangerous to do as instinct prompts, and pull at the bridle, because the horse, instead of merely stopping, as he would do on the level ground, is actually brought over backwards, and the saddle had better go over his tail than that the rider should cause this by clinging to the bridle. A horse going up-hill cannot kick, so that if the rider will only let go the reins, no greater harm follows than a fall backwards down a steep bank, which certainly is not pleasant; but it is better than the same accident with a horse upon him in addition. There is no occasion for buckling up the straps of the breast-plate tightly, as it is not intended to act except when the saddle slips back; and if too tight, under ordinary circumstances it impedes the shoulders.

A MARTINGALE is seldom safe with hounds, and should only be used by an experienced horseman, because it is very apt, when unskilfully employed, to pull the horse into his fence at the

moment of rising. Many accidents occur from this cause; and though some horses are so awkward to ride without it that it seems indispensable, yet it should always be put on with fear and trembling by the young horseman. If his hands are good and light, and he can depend upon his not using it in going at his fences, this aid is far more useful, *with hounds*, attached to the curb-rein than to the snaffle. The horse's head can then be kept in place by this rein in his gallop, and he may be ridden, as he ought always to be, at his fence, with the snaffle alone, leaving the curb at liberty; but if the curb is not quite free the head is even more confined than with the martingale on the snaffle, and the effect in pulling him into his fence is still greater. With a proper degree of presence of mind this can scarcely take place, and on the whole I am satisfied that in the long run its use on the curb-rein, with hounds, is safer than on the snaffle, and also far more efficacious. The martingale, when used on the snaffle, must be very long, because if short it will be sure to do the mischief I have alluded to, but on the curb it may be as short as is required, and its full power may then be displayed; besides which, the check on the curb is much more severely felt than on the snaffle, and the horse soon learns to avoid hurting himself, unless he is maddened by too great a severity of bit, or too tight a curb-chain. This use of the martingale on the curb-rein is not at all general, but I learnt it some years ago from one of the best horsemen in England, and I have since used it with great advantage myself. When I first saw him thus equipped, I told him, as a piece of gratuitous information, at the covert-side, that his man had made a mistake; to which I received the civil reply, with a very knowing twinkle of the eye, that the mistake was on my part instead of on the side of his stable-man. And so by observation afterwards I found was the case; and I am astonished that the plan has not been more generally followed, especially as the above-mentioned person is a very celebrated individual in his particular line.

Boots are sometimes required, either for the fetlock joints or for the inside of the fore-leg, where in the gallop the one foot sometimes strikes the other leg, or, as it is called, "hits" it either between the joints, which is the common place, or just below the knee, constituting the *speedy cut*.

A Spare Shoe, fitted to the fore-foot, should always be carried in a pocket of the saddle, with nails enough to fix it on, so that the blacksmith may be able to tack it on without loss of time and the use of shoes and nails that do not fit. The fore-shoe will always do for the hind-foot at a pinch, though it does not answer so well as the regular shape; but the hind-shoe will not fit the fore-foot.

Sect. 4.—Dress and Aids.

The Dress for riding to hounds is varied almost as much, and as often, as "the fashions" of the ladies. In one year the cap is considered correct, while the next it is voted "slow." Next year leather-breeches come into use, but some D'Orsay of the hunting-field dislikes their feel when wet, and they are supplanted by imitation doe-skin, or cords. Boots, again, are seldom two seasons alike; and within my memory there have been three complete revolutions in this department, without reference to the various Holderness, Raglan, and Hessian makes, which have never been able entirely to supplant the old English top-boots. This last article has steadily kept its ground, although, as I have already remarked, it has submitted to constant changes in the length and colour of top, and the quantity of wrinkles bestowed upon the leg of the boot, in which fashion is always changing the allowances. The cut of the coat also varies: at times having been a complete dress-coat, with swallow tails, and at others a simple scarlet frock. The present fashion is in favour of the hat, with a moderately-full body-coat, leather breeches, and top-boots with dark-coloured long tops. Woollen drawers and stockings, with flannel or elastic woollen shirts, should be always worn with hounds, because of the liability to wet, which in this country is ever to be guarded against. Leathers, without some woollen material under, are dreadfully cold in wet weather, and should never be worn next the skin. The boots require to be tolerably strong, with thick soles, on account of the state of the ground, which is often so wet as to saturate a thin boot on dismount-

ing for any purpose. In some few hunts, green, yellow, or brown are the colours adopted, but in the great majority of cases, throughout England, scarlet is the hunting colour.

The Aids are the whip and spurs, which almost everyone carries and wears. Fashion here also interferes, and sometimes enjoins the use of the crop, or handle without the thong, and at others permits the latter to be attached. But one or the other should always be carried, in order to stimulate the horse by striking him down the shoulder if he is tired or sluggish in rising at a strong fence. The spurs also should always be on, though they need seldom be used; but, in a long run, the time generally comes when a slight touch of them will serve to prevent an accident, unless the hunter is a very clever and game animal. They should be used in the last stroke of the horse, just before he is going to rise, for if they are delayed until he is in the air, as I have often seen, they are utterly useless, as the horse's power is then inoperative; and though he may alter the mode of coming down, he can never increase the effort with which he has risen.

Sect. 5.—The Covert-Hack.

A Covert-Hack is now generally used, because, in the first place, many of our best hunters are not good hacks; and, in the second, though the hour of meeting is six hours later than it used to be, yet the habits of the present generation have still further postponed the breakfast-hour, and the fashionable man must ride at least 12 miles an hour to covert in order to avoid being thrown out. In days of yore our grandfathers breakfasted at daybreak, or sometimes rode 10 miles on an empty stomach to the house of a friend near the appointed meet; and they were contented to do this at a pace which would not turn a hair of their hunter's coat, even though that was perhaps not quite so silky and short as it is expected now to be. Such a practice would now be voted slow, even though the breakfast-hour might easily be appointed for 8 a.m., leaving an hour and a half or two hours to ride quietly to covert. But, no, the fast man must ride fast, and make his appearance on his blood-hack, galloping 16 miles an hour, and with his overalls bespattered with mud. He leaves his house at 9.30 or 10 a.m., and reaches the meet just in time to put off his outside skin of dirt, and appear without a blemish on his boots and leathers. Then mounting his hunter, which is waiting for him, he is ready to such "deeds of derring do" as shall astonish the festive circle in the evening. For this purpose the hack must be a galloper, capable of keeping up a fast hand-gallop all the way from point to point; he should be an easy goer at this pace, safe, and clever enough to take any moderate fence which may interfere with a short cut from one point to another. Green lanes are often very deep, and it would be impossible to get along through them at the desired pace; the only alternative therefore is to turn out on the adjoining sound ground, and get over or through the fences as well as the hack is capable of doing them. If he is a perfect covert-hack he will creep or jump in hand, or get across the country in some way, according to the weight he has to carry; and he should therefore be a miniature hunter, with the additional requisite of being a good hack for the road. Many a horse is a pleasant and safe goer on soft ground, but if he is set going on a turnpike-road he will roll over his rider in the first half mile. This is what the covert-hack should *not* be; what he should be is a clever and safe galloper. A trotter is tiring, in the first place; and in the second, is not suited for the green sides of a road or the green lanes which can generally be met with in reaching the meet. About 14 hands is the best average size for these hacks, whatever the rider may be; if for 16st. or upwards, the hack must be a cob; but if for much less he may be bloodlike, or even quite thorough-bred, if he can be obtained of that breed with sufficient action. Most covert-hacks, however, are under-sized hunters, the produce of mares intended to breed something more valuable in the market; but not growing into the contemplated proportions, the breeder is obliged to sell them as hacks; and, when fast and clever enough, they are devoted to the purpose now under consideration. Action is the main point; not too high, so as to throw time and space away, but a fast stealing-away kind of style, which gets over the ground without distressing either horse or rider. If

the hack can get along in this way, safely over all sorts of ground, and can last at his three-quarter pace for ten or a dozen miles, he is a good covert-hack, let his appearance be what it may; but most men prefer good looks in addition, especially as these hacks are available during the summer for other purposes. A neat head and neck, with a general outline calculated to please the eye, are therefore eagerly looked for; and the consequence is that one of 14 hands, or a little more, tolerably well-bred and good-looking, which is capable of carrying from 12 to 16st. comfortably, and at a fast pace for the distance above specified, is worth from 100*l.* to 150*l.* according to his looks and action. A good judge may perhaps suit himself for one-half the lower sum; but in London, or any of the best hunting countries, such an animal is worth as much as I have stated. It must be recollected that he requires all the good qualities of the horse, except flying speed and great size; and that he must possess beauty of form and good temper, safe and fast action, cleverness, and above all good sound feet and legs to stand the battering of the roads, over which he must often be ridden at his three-quarter pace. Now, many scores of hacks, so called, may be looked over, before a good judge could select one corresponding in all points with the above description, and consequently when one is found it is fair to expect that his price will be estimated accordingly. Such animals fetch long prices even at the hammer; and when Mr. Tattersall has one before him, it more frequently reaches above the first-named sum than drops below it. It is needless to remark, that the groom who takes the hunter to the meet is left in charge of the hack when the exchange is made, and at once takes him home.

Sect. 6.—The Pad Groom, Stud Groom, and other Servants.

A Pad Groom, or Second Horseman, is another modern invention; and he is intended to enable the forward rider to hounds to escape the consequences of his sharp burst. From 20 to 40 minutes at a steeplechase pace will pump out most horses under any weight; and, therefore, when this has been achieved, the rider must either give up his amusement for the day or fall back upon a second horse. The latter plan is adopted by those who have the means, and a groom of light weight with a good eye for country is put upon the horse, with instructions to nurse him, and yet be at hand to make the exchange as soon as a check occurs, after it may be supposed that the first horse has had enough. For this purpose the pad groom, or, as he is now more generally called, the second horseman, should be of light weight, yet strong on his horse, so that he can command him, and ride him, if necessary, at any fence. Sometimes this cannot be avoided, and the second horse *must* be ridden nearly over the same line as the rest of the field; but it must be remembered that in practice the difference is very great between going quietly over a line where a large field of horsemen of all classes have passed, and taking the same fences in the front rank. Those who have had to make up lost ground after an accident are aware of this, and must have seen in most cases gaps in the fences which any donkey can get over; yet, occasionally, a strong post and rail or a brook remains *in statu quo*, and must either be jumped or else a long *détour* must be made, which would take much more out of the horse than the leap with a light-weight. Hence, the second horseman must be capable of getting quietly over all these places, but should always exercise his judgment by avoiding them where it is possible to do so; because every exertion is so much taken out of his horse, and therefore it is only when the leap is less trying than the gallop to avoid it, that it is justifiable to put him at any large fence. By this kind of saving of the horse, and by taking advantage of keeping the inside of all bends, riding headlands, along lanes, &c., the second horseman ought to be able to bring up his horse at the end of a burst almost without turning a hair, and indeed frequently as fresh as when he started. It must also be borne in mind that these horses, though up to 12 or even 16st., are only carrying about 8st., and that they are consequently under every advantage; while the first horse is galloped through all sorts of ground and over every fence as it comes, under a difference of 4 or 6st., or even more. But it requires great judgment in nursing the horse, and in knowing when and where to bring him up to the

master; still there are some who are always ready when wanted, and yet until that moment they have never been within nearly a mile of the first horse. On the contrary, others keep close till they are really required, and then are a mile behind. Natural quickness and a desire to please are indispensable qualities in this kind of servant; and when perfect in his vocation, he is an invaluable adjunct to the stud of the heavy-weight in a fast hunting country. He generally also takes care of two horses, as an ordinary groom.

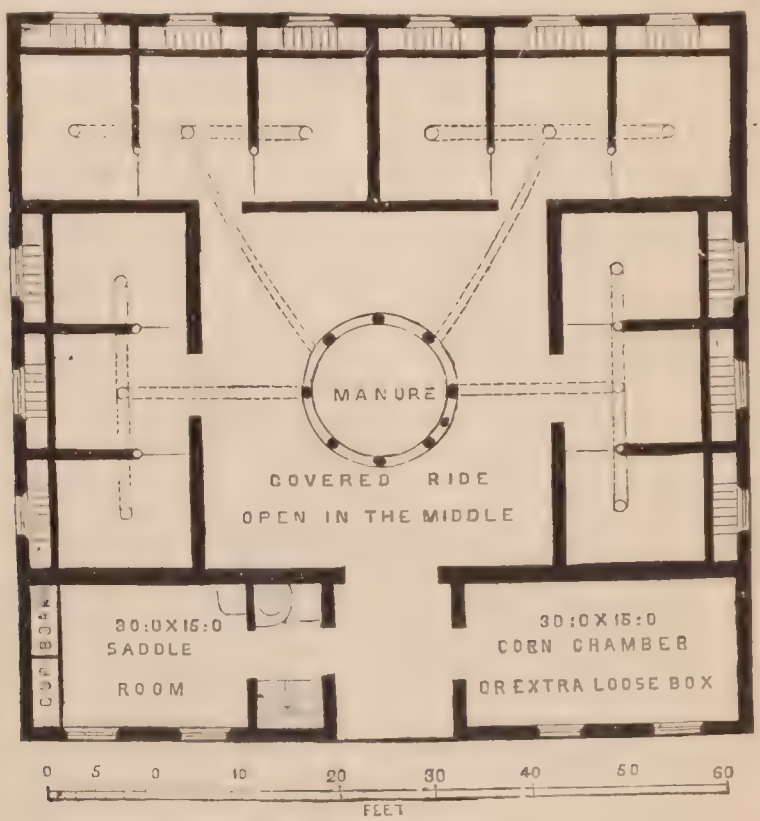
THE STUD GROOM is the head groom who has charge of the whole hunting stable, with as many servants under him as are necessary. Boys are not generally employed about hunting stables, because the object is not so much to keep the weight off the horses' backs as in the racing stable; and the objection to boys, that they cannot be depended on, is greater that any compensating advantage will balance. The usual number of helpers or grooms in a hunting stable is one to three horses, the stud groom not counting as one, and the second horseman taking either one or two. In small stables the head man takes his share, but where there are a dozen horses his head is better employed in looking after the men than his hands would be in dressing his share of the horses. Accidents are constantly occurring in the hunting stable, and these he will himself attend to, which, with the measuring out of corn and seeing after what is wanted by the men under his care, will fully occupy his time while the stable hours are passing. The stud groom should have had considerable experience in horses of this class, either in a training stable or in a regular hunting establishment; the latter being the best school, because there are generally bad habits picked up in training stables which are not often lost. Still many very excellent men of this class have passed the ordeal with advantage to themselves and their employer, and if they are unscathed they are extremely valuable. The principles upon which the two kinds of horses are got into condition are so similar, that what is learned in the one is always useful in the other; whilst at the same time, some modifications must always be made to suit the difference of external circumstances.

THE WAGES of the head man vary from 60*l.* a year up to 200*l.* or 300*l.*, and in large establishments no price is too high to pay for a really clever man who knows his business and will attend to it. The pad groom will generally require a few pounds a year more than an ordinary servant; but his exact wages will always depend upon the value his master places upon his powers of doing what is required. In some instances I have known 100*l.* a year given for this office; but this liberal scale of remuneration is not often adopted. The wages of ordinary helpers vary from twelve shillings to a pound per week, according to the class of men required, and the locality.

SECT. 7.—THE HUNTING STABLE.

THE HUNTING STABLE should be built on somewhat different principles to the racing stable, inasmuch as it is required for horses which do very severe work once or twice in a fortnight, and then have an interval of comparative rest. They are also much more exposed to the weather, and the temperature in consequence should be several degrees lower. Hence, the hunting stable should be lofty, airy, and light. At least 2000 cubic feet should be allowed for each horse, which will require for this purpose two cubes of ten feet in every direction. The best proportions, however, for each horse are found in a box 18 feet long, 12 wide, and 10 high, which will give 2160 cubic feet; and if the same sized box can be made 2 feet higher it will make 2592 cubic feet, which is quite as liberal an allowance as is desirable in any building heated by the powers of the horse alone. The annexed plan is calculated to accommodate 12 hunters, and is the most economical and convenient form. It consists of four separate stables, all of equal size, and each adapted for three horses, giving a loose box to each, but separated from one another above the level of five feet by iron bars only; two doors in each stable divide off the three boxes entirely when so desired, and they may be made to slide into the divisions completely out of the way when it is so ordered. The slides are from above, and the doors thus hung rapidly travel across, yet cannot possibly be opened by any horse. Each stable should have a large ventilating funnel which is capable

of being partially or entirely opened and shut by a wooden valve, worked by a string, and within the easy reach of the head groom. A window is at the head of each horse, guarded by iron wire, and high up above the rack and manger. These should be of the enamelled iron form, with a separate division for water or gruel; and the rack between them and on a level with them, by which a great saving of hay is effected. A trapped-drain runs into the central tank, which also takes the manure: and the wall surrounding this carries eight pillars, which support a covered shed for the convenience of exercise in bad weather. Such a stable, with all the appurtenances in a plain but good style, yet without much external ornament, ought to cost from 350*l.* to 400*l.*, or in some situations a little more, according to the price of materials and labour. With a stable on this plan, and *well ceiled*, there can



THE HUNTING STABLE.

be no objection to a hay-loft over. The steam is carried off readily by the ventilating shafts, and neither injures the hay and straw, nor do these cause any harm to the horses; but, on the contrary, they serve to preserve an even temperature in both summer and winter. The saddle-room fireplace should be made to heat the boiler in the anteroom to it, and then the flue should pass across the saddle-room, under the saddle-pegs, which are thus kept dry by its heat. In the vacant covered passage between the saddle-room and corn-chamber, a dirty horse may be washed with warm water from the boiler and then removed at once to his stall; this is an excellent plan, and saves the great risk of cold which the long continuance of wet dirt is sure to occasion. On the whole, this form of stable will be found the most suitable for a stud of hunters of the above size; and if more room is wanted, three more stables of similar size can be added, making room for nine more horses, and still preserving the square form, which is convenient, because it allows of the circular ride for frosty or wet weather.

CHAPTER II.

PURCHASE AND MANAGEMENT OF THE HUNTER.

Sect. 1.—Purchasing the Hunter.

Hunters are generally obtained by Purchase; and few people who breed them also ride them, except as a means of sale. Most of our hunters are bred by farmers, who seldom keep a large stud of these animals, but breed two or three colts every year. Sometimes, however, a larger number of this class of horses are reared upon a farm, and to the great profit of the breeder; but, as a rule, the gaps in the hunting stable are filled either by thorough-bred drafts from the racing stable, or by hunters bred expressly for the purpose by farmers, who rear them and ride them till five or six years old, and then, when wholly or in part broken to hounds, and sometimes when perfect hunters, they are picked up by dealers, or by gentlemen without their intervention. In good hunting districts the farmers have a good chance of showing off their young horses to advantage, and can often command high prices in consequence; but generally they are obliged to accept a lower sum than might be cheerfully given by the ultimate purchaser, because they have no means of displaying their horses to any one but the dealer or his agent. In this way one or two hundred per cent. are realized by the London dealer, or by one of the first provincials; but as the price is regulated by the fancy of the purchaser, and as some parties *will* pay for their sport, it is not to be wondered at that dealers with elastic consciences are ready to accommodate them. Few private gentlemen who hunt, and who often have a large stud, are in a position to breed horses, neither possessing the inclination nor the knowledge necessary for its successful prosecution. Besides, I have shown that first-class thorough-bred colts cannot be reared for less than 150*l.* at three years old; and if the additional two or three years be set against the extra price of sire and dam, and the forcing kind of keep necessary for the racing colt, it will be found that hunters bred expressly for the purpose by gentlemen for their own studs, will average that sum, or very nearly so. Now, if the *average* is 150*l.*, the result will be that when the various chances of lameness, bad action, bad temper, &c. &c., are taken into account, which will cut off two-thirds of the number, the price will be nearly trebled, and that the value of good weight-carrying hunters, perfect with hounds, sound, and fit for sale, will be fully 400*l.*; a sum for which very first-class horses may always be bought. Thus, I have shown that the best plan is to go to market for these animals; and the only question is, how and where? Of course where there is a demand there will always be a supply, and the mode of effecting this arrangement will appear in examining into the general subject included under the head of "The Practice of Breeding Horses of all kinds."

The Best Mart for Hunters is the hunting field, where their qualities can be satisfactorily ascertained; nevertheless, it is easy to practise deception even there. Some men can ride an awkward horse in such a style as to lead the spectator to believe that he is as handy as a kitten, which feat is effected partly by careful drilling and the use of the voice instead of the rein or spur, but chiefly by the knowledge which the animal has obtained that his rider is a horseman of the first order, and, in consequence, his master. With such a man the bad-tempered horse is often subdued into good behaviour, and does all that he is asked; indeed, he performs so well that the customers almost fight for his possession, and a long price is given without further trial, the fortunate purchaser not even requiring one. The next week sees the same animal mounted by his new proprietor, who soon has to commence a struggle for victory that as often as not terminates in favour of the quadruped; whilst the biped, who would like to call himself *master* as well, is obliged to consider himself well beaten, and in despair he sells his horse at the hammer without a character. Hence, it is never safe for a purchaser to calculate upon a horse suiting him till he has ridden him, for even in less extreme cases than the above he will often find that what suits his neighbour will not always

suit him. Some men like a puller, some like a horse to go with a slack rein, and some again like the happy medium (when they can get it). The same applies to the style of jumping, which only pleases a certain class of men when it is very deliberate and cautious, giving time for "craning," and allowing the mind to be changed very late indeed. Horses which rush at their fences are an abomination to these men, and they would not ride one which had the least tendency that way; yet there are others who like horses to take their fences quickly, and, though no one perhaps approves of actual rushing, yet a very close approach to it is often patronized. Creeping too is considered indispensable by many men, while others dislike it above all things, and never expect a horse to take a fence at any pace less than a trot.

Independently, therefore, of the difficulty of ascertaining the temper in any other way, the man who wishes to be well suited and is at all particular should try every horse before buying him; which he may do to a certain extent without hounds, but not satisfactorily, since they are often different creatures quietly by themselves and when in company, or especially with hounds. I recollect on one occasion a gentleman of my acquaintance buying a magnificent chestnut mare after riding her over a dozen fences, which she topped in a most beautiful and clever style, taking a circle round his house, and in cool blood. He thought he had a treasure, and was delighted at getting such a hunter for *only* 200 guineas. Next month the hunting season began, and in the meantime she was regularly put into condition by his groom, who reported that she carried him beautifully in her gallops, and that she was a "clipper." I happened to be present at the covert-side on the first day, and the new purchase won the general admiration of all the field. But no sooner was the fox found and the first fence arrived at than the mare and her rider parted company, she having "bucked" in her jump, and thrown her new owner with great force on to his back. The fact was that she was a very excitable animal; and when quietly by herself she would do her fences just as a hunter should, but when with hounds she over-jumped herself at first, cocking up behind in the most awkward manner, and unseating anyone but a very strong horseman, which my friend certainly was not, though a good performer enough with an easy horse to ride. Now, if this mare had been tried by him with hounds he would have declined her at once; and though he persevered for some time, he never could ride her in comfort, and seldom escaped a fall, or a very near approach to it, on first getting away with the hounds.

A hunter, therefore, must be examined not only as a horse in the usual mode, but his hunting qualities should also be investigated by an actual trial; and hence an experienced hand will say, on hearing the price and approving of it, "I will give you all you ask, if you will let me throw my leg over him, *and I like him then.*" It is extraordinary what a difference this trial often makes in the estimate formed of a horse, not only in this case, but in all others. By many it is supposed that a walk or a trot in hand before the buyer is all-sufficient, and that a horse may be bought at the hammer with some degree of certainty as to his suiting the particular taste of the purchaser. This, however, is a fallacy; and though a run up and down the yard at Tattersall's is better than a stable examination without it, yet a minute or two in the saddle are worth ten times as much. An experienced horseman detects in a very few yards whether a horse goes strongly or not, and whether he can move under weight; and though a longer trial is still better, yet a very short distance, especially if the ground is a little undulating, will serve to give a tolerably just estimate of the natural capabilities of any animal of the species. The mouth is of so much importance to the due performance of the hunter's duties, that it must be taken into account, and yet it cannot possibly be more than guessed at when there is only a run of a few yards with a loose rein or a sudden jerk to pull up. In the stable it is quite out of the question to attempt to pick a hunter; and there will always be a grand variation in a stud of horses between the pick in it, and after they are shown out.

Next to the hunting field in choosing a hunter, and especially when money is no object, are the stables of the best London dealers, as well as some provincial ones of note. It would be

invidious to particularize, but there are at least a dozen in London, and many others in the country, where every variety of hunter may be obtained *by a good judge* with a long purse. Here a gentleman known to the dealer may always have a fair trial; but he must not expect to be allowed to ride a fat horse as he might do one in condition, nor will he find that such an animal will in his fat state go in a style fit for hounds. Some dealers who do much with hunters keep a certain number in the season always tolerably fit to go, and these may well be tried with or without hounds; but the majority are in "dealer's condition"—more like beef than hard horseflesh. It is not, therefore, to be wondered at that sellers are sometimes scrupulous about allowing their horses to be tried out of their sight; for they are well aware, by experience, that vast injury may easily be done, and speedily too, both to wind and legs, as well as fat, by riding horses while thus totally unfit.

The best time for procuring hunters is at the end of the hunting season, when they may be often bought at comparatively low sums, and showing all their faults, in the shape of big legs, blows on the shins, &c., which will all disappear by rest and proper treatment; whereas the very same animals in six months' time would be worth 30 or 40 per cent. more money, and are not so often to be met with either, because most people sell off when they have determined to give up hunting, which they generally do at the time when there is no temptation to adhere to its pleasures. But even at the hammer good hunters often sell at long prices, when they are well known in their respective districts; and the pick of studs command very high sums. One of the Quorn horses sold for 540 guineas in May 1874; and at the sale of the Cheshire stud in 1872 eight of the best produced 3,000 guineas, or an average of 375 guineas each, while the average of twenty was 286 guineas each. Unless a horse has a character it is a dangerous thing to meddle with him; for though he may be as good-looking as possible, and all over a hunter in appearance, yet when tried he may be utterly useless. Such a result often follows a speculation, even with the advantage of good judgment and experience; and the lottery is in this department more often full of blanks than in any other where horses are concerned. Hacks and harness horses may much more easily be selected with this imperfect trial, but hunters cannot be more than guessed at; hence it is never prudent to give much more at the hammer for a horse intended to serve as a hunter, than he will always command again at the same kind of sale, and for harness or general purposes; and it is a good rule not to exceed that sum by more than you are careless of losing; then if he turns out well, so much the more satisfactory is the result; and if not, he may be resold at the trifling sacrifice originally contemplated as a safe resource. In this way a good hunter may often be picked up at comparatively little money, but generally not until several have been rejected and resold as only fit for "flat-catching," or for harness-work. Except at Tattersall's, few good hunters are put up in London sales, and the purchaser would do well to confine his attentions to the above well-conducted establishment. No tricks are allowed there more than are inseparable from the nature of dealing; and whatever is stated as a fact by the auctioneer may be depended on as being to the best of his belief.

Few thoroughly-made hunters are quite sound in every respect, and some very celebrated horses have been notoriously the reverse; consequently there are many hunters of known good character which are sold with all faults, but the majority are warranted sound, and may be returned, if proved to be otherwise, within the time specified in the rules of the establishment. Lameness of many kinds may be temporarily cured with rest, &c., but roaring, whistling, and all defects of the wind, are easily discovered on the first smart gallop, and generally also in the stable, though by no means invariably so. Many horses which are not roarers will make a noise in the stable, and some which are rank noisy ones are quiet on the threat with the stick in the true scientific way.

Sect. 2.—Summering.

Nimrod *v.* Nature.—Until within the last thirty or forty years, hunters were almost always turned out as soon as the first grass showed itself, and this kind of food was considered a panacea for all their complaints. After being kept

in a warm stable all the winter, and their coats made as fine as possible, they were stripped of their clothing as rapidly as their owners dare, and turned out, often without any hovel to run into in cold and wet weather. The result was frequently that in the autumn they came up broken-winded, or sometimes they died in the seasoning; and in all cases, if healthy, they were fat, pursy, and unwieldy, and required nearly the whole of the hunting season to fit them for the work they had to do. Certainly, for the pace our forefathers rode, a grass-horse, if fed with corn also, as was often done, was capable of keeping his place through a run, though with a liberal display of lather; but as it is notorious that a horse in training requires six months, after leaving the grass-field, to prepare him even for a moderate race, and as it is also well known that a fast thing with hounds is still more trying than a race, so it is evident that this fast thing will require something more than grass-fed horseflesh to carry the possessor safely through it. Hence, the plan has been almost universally abandoned, in great measure owing to the writings of "Nimrod" (Mr. Apperley) on the subject, and the hunter is now nearly always summered in a loose box.

Besides, there are other objections to turning a hunter out at this season of the year. It is generally the case that his legs and feet—sometimes one or the other, sometimes all—are inflamed, and require rest, blistering, firing, &c. Now, if this is the case, the turning out only aggravates the mischief, because these horses are, of all others, the most excited by liberty, from associating it with their usual occupations, and they gallop about, battering their legs on the hard ground, until the original mischief is made ten times greater. If legs or feet are to be mended by turning out, it ought to be done in the winter, or else marshes should be chosen; but these are objectionable, because they are opposed to the future hard condition of the horse. Upland grasses make the horse flabby enough, but marsh grass is ten times worse. I have turned out many horses in the summer myself when lame, but I never found them to be improved by it, and some have been utterly ruined by their galloping over the hard turf. If they must go out they should be fettered, which stops their gallops, and is a good preventive at this season of the year.

"Nimrod's" plan of summering is as follows:—The horse is gradually cooled down, by taking off his clothing by degrees, and by abstracting his corn partially or entirely, giving physic, &c. &c.; all which will require nearly a month, or until the middle of May; he he is then to be put into a large, roomy, and airy loose box, with the upper half of the door capable of being constantly left open, or with a strong chain put across the door-posts, the door being left entirely open, which is better still, because it allows of a free circulation of air. When thoroughly cooled down, the legs may be blistered or dressed with any of the numerous applications which will be hereafter described. Tan is the best material for the floor of the box, and, if thickly spread, serves all the purposes of litter, whilst it keeps the feet cool. Italian rye or lucerne, or ordinary grass, may be given, at first mixed with an equal quantity of hay, but when the horse is accustomed to them, forming the entire food. Vetches I am not fond of for horses doing no work. If young, they are irritating to the bowels, and do nothing but scour them; and if old, they are strong and heating. For coach-horses at work, when given with corn, they answer better than grass, especially when the pods are fully developed; but for summering the hunter, I prefer some of the grasses or lucerne, which are not nearly so heating as vetches. The shoes may be taken off, and the feet pared out nicely, removing all broken pieces of horn, and cutting out any sand cracks, seedy toes, &c., to the quick, so as to allow them to be radically cured at this time of complete rest. If the horse is tolerably young and hearty, he will do better for a month or two without any corn at all; and during that time he will have recovered from the inflammatory condition of the system which high feeding inevitably produces. The blistering, firing, or other remedies, have now done their work, and the legs are reduced in size, with all their old lumps and bumps almost entirely gone. This will be accomplished by the end of July, or sometimes, when the legs are very stale, a month later; until which time the corn is still forbidden, or only

given in small quantities, and the whole attention is turned to the removal of the effects of the thorns and battering blows which the legs and feet have sustained during the previous season. But it is by this time necessary to begin to restore the corn, and to leave off partially or entirely the green food. By the end of August, at the latest, hay should form the principal kind of fodder, with two feeds of oats, or thereabouts, according to the fleshiness of the horse. If he is much wasted, more must be given, and if the reverse, one feed a day will be enough. The shoes may now be tacked on, and the horse walked out regularly every morning on the grass for an hour or two. In the middle of September the training for the hunting season begins, and at that time the summering may be considered at an end. WATER should be constantly supplied during the whole summer in the box, so that the horse may drink when thirsty. The COAT is left entirely undressed.

PHYSIC will be required two or three times, or oftener if the stomach is much upset by the long-continued work and fasts of the winter. Nothing tries the constitution of the horse more than these long fasts, which are not suited to his small stomach; this, from its size, requires to be replenished every four hours at most, yet it is often six, eight, or ten before the tired hunter gets even a bucket of gruel, and no wonder, then, that he requires a fortnight to come round from a severe day's work. Condition-balls, &c. &c., will rarely be required; but sometimes, in spite of all the green food and other adjuncts, the stomach remains obstinately out of order, and the food seems to do no good. Here a stimulus or stomachic is required, and a warm cordial stomach-ball, once or twice a week, will be of great service. (See Diseases of the Horse.)

SECT. 3.—BREAKING AND TEACHING.

BREAKING is of course required for those colts which are specially intended for hunters, but except in teaching to jump it does not differ from the plan adopted in ordinary colt-breaking. The same mouthing-bit which I have recommended at page 453 will also suit this kind of horse, but its reins should be buckled considerably tighter and the horse "put upon it" for an hour a day until he bends himself well. He may also have buckled on his roller what is called a "dumb jockey," with springs contained within its arms, by which the bit is allowed to give and take with the horse's action, but still always having a tendency to bend the neck and bring the horse back on his haunches. Unless this is effectually done, and the colt is made to use his hind-legs by bringing them well under him, thus carrying a good part of his weight, he is never safe across ridge-and-furrow, nor in awkward places, where he is obliged to creep up close to the take-off, and gather all his legs together before making his spring. When the horse is being lunged he may be made to jump a bar, but not too often over a movable one, or he finds out its tendency to fall, and becomes careless. A fixed bar should be used as soon as the horse understands this part of his business, and he will not hurt himself if he falls over it a few times; because there is nothing to hold his legs, and, consequently, he either falls forward or backward without injury. The bar should have side guides, so that, in lunging, the horse must go over or come back and face the whip of the groom following him; and when they are properly managed, the leading-rein slides over them without catching, and the bar may be taken by the horse in each round of the lunge. Some horses seem to enjoy the fun when they are clever and good-tempered, but not more than six or eight jumps should be given in any one lesson for fear of disgusting the pupil. When he is perfect over the bar with the lunging-rein, and *after he is broken to all his paces*, he may be ridden over it, or any small fences, in cool blood; but he never ought to be put at this kind of work till he is perfect at all his other lessons. For if he does not know what the spur or the pull of the rein means, it is useless to confuse him by trying to make him do what he does not understand. No large jump should ever be tried without hounds, and when the colt is willing to go when he is wanted over small places, it is better to defer the conclusion of his jumping education until he can be taken out with hounds, as I have explained under the section treating of the teaching of the steeplechaser. With hounds the

colt is inclined to follow the field of horses, and will soon attempt any place his breaker puts him at: though often making mistakes, and sometimes carrying the fence before him into the next field. Good hands, a firm seat, and an unruffled temper soon make him know his powers; and in a few times he learns to avoid mishaps and keeps his legs without difficulty. The breaking-bit already described is the best to ride young horses with, as it is large, and allows of considerable pressure without injury; so that if the breaker is obliged to keep the head straight with some force, the colt is not thereby dragged into the fence, as would be the case with a small and sharp snaffle or with the curb. The same caution must now be exercised as before with regard to a too long continuance of the early lessons. The young hunter, as well as the steeplechaser, should be gradually accustomed to his practice, and consequently should never have too much at first. See pages 502-4, under the head of Steeplechasing."

Sect. 4.—Conditioning.

The Preparing the hunter for his work is carried on exactly on the same principles as the training of the racer, or more especially of the steeplechaser. Physic having been given, he must be sweated, if necessary, and generally over about four miles. Walking exercise to the amount of about three hours a day is always enjoined, and if good turf can be obtained for the purpose so much the better. A road will do very well with horses possessing good feet and legs; but in all cases grass is cooler to the feet, and gives less jar to the legs. According to the nature of the country must be the severity of the preparation. If it is a grass one, with a good scent, the horse must be made fit for anything, and he may well be trained just as in the preparation of a steeplechaser. (See page 504.) If, however, the runs are likely to be slower, he may be kept much bigger, and more full of flesh, requiring only an occasional gallop, and no sweat, unless he is very lusty. Very often he is required to go out twice a week, and then if he is drawn fine he sinks in flesh, and is soon wasted to a shadow, and unfit for his business. The groom, therefore, should understand what he is to get his horses ready for, and act accordingly. The corn should be gradually increased, with one or two doses of physic in the middle of the preparations; and the hunter is got ready to begin his season.

Singeing, or Clipping, is absolutely necessary in many hunters, if the horse is to be made as fit as he is capable of. Many hunters are always rough in the winter, and if they are allowed to keep their coats on they can never be thoroughly dried after work till the next day; and the consequence is that they are weak, and subject to coughs. The gas-lamp now removes the coat in a very superior manner, and has almost superseded the use of the clipping-scissors. It consists of a broad kind of comb, perforated with holes which communicate with a flexible tube screwed on to a gas-pipe. The gas, on being admitted by turning a cock, is lighted, and burns with a series of strong jets along the edge of the comb. This is now run over the surface of the horse, and as it raises the coat by the teeth of the comb, the gas burns off the ends, and thus reduces the lengths. A clever hand will soon burn off the whole coat of a horse down to a proper and equal length, and he then looks nearly as well as if clipped, but certainly not quite equal to the appearance of a coat well done by a good clipper. A modification of the gas-lamp has lately been invented, which improves the process very considerably. It consists in the addition of a double tube of indiarubber, by means of which a continuous stream of water is made to flow through a brass tube placed in the position occupied by the teeth. By this arrangement burning the skin is prevented, and the singeing can be much more rapidly and effectually done. There have also lately been invented a variety of clipping machines, by which an ordinary groom is enabled to take off the coats of the horses without employing a regular clipper. Whatever mode be adopted, after the coat is off, it is usual to give a sweat in order to get rid of the ends of the hair, and, as it is said, to prevent their taking cold; but I cannot see how this can be the result, when an ordinary sweat is known to render the horse more liable to cold than before. A good washing with soap and water answers the same purpose, and when a

horse is poor, and cannot afford the loss of sweat, it is always to be preferred.

THE SELECTION of the horse to be ridden on any particular day is sometimes left to the stud-groom, but generally the choice rests with the master, after consulting with his servant, and ascertaining the comparative fitness of the horses. The one which is the most fresh is of course selected, if he is as well adapted to the country which is to be ridden over as the next on the list. Sometimes in this respect there is a great difference, and the horse which will go well over one kind of country will be a bungler over another—as, for instance, when there are frequent water-jumps or stone walls, which require a very different style of jumping, though some few horses are equally good for both. Some hunters, when intended to be used the next day, require setting on the muzzle just as for racing, but should always have their hay first, and should then be set either late at night or very early in the morning. It is seldom the case that the hounds find before 11 A.M., and by 6 the muzzle may be put on after a feed of corn and a few go-downs of water, and kept on till the next feed just before starting. Many horses are very greedy in eating the litter, and will fill themselves as full as possible in this way, if allowed to do so. About 8 o'clock a couple of quarts of water may be given, and at 9 the second feed of oats, and by 9.30 the saddle is put on, and the horse started for the covert-side. In very cold weather a light quarter-piece may be put on, but almost always the horse is taken out without one. I confess that I can see no reason why this should be so, and many horses no doubt are chilled by waiting for half an hour at the covert-side before they are mounted by their owners. They may be walked about, but this will not keep them warm in a windy and wet day ; and I think it is a very good plan to allow the sheet to be kept on, and only removed when the hounds are thrown into covert and there is a momentary expectation of finding. Hunters are always exercised in warm clothing, and yet, though they are walked to covert, they are expected to keep as warm there without clothing as if they never had a cloth on. It is the long-continued exposure which chills, not the removal of the cloth for a limited time ; and I am sure that I have often seen the coats all turned the wrong way in a lot of hunters waiting at the meet, through an adherence to the usual plan. The groom will of course take care that the girths are properly tightened before he hands over his charge to his master's use ; also, the curb-chain, that it is not too tight, yet sufficiently so to command the horse.

SECT. 5.—GETTING ACROSS-COUNTRY.

THE GENERAL PRINCIPLES upon which this exciting amusement is conducted have been already alluded to ; it now remains that we go more fully into the details of its practice. In order to prevent accidents as much as possible and yet not to interfere with that degree of emulation which gives its chief zest to the sport, certain rules have been for a long time, by common consent, adopted. They are now fully recognised in all hunting countries by those who wish to be considered sportsmen, and any departure from their *dicta* is a breach of good (hunting) manners. In addition to these rules some remarks will be offered, more in the shape of advice to the tyro than as bearing upon recognised customs.

A LINE OF HIS OWN should be taken by every man, either strictly behind another or at a given distance to the right or left ; and he should never attempt to deprive his neighbours or his leader of the line which they have chosen, though he may fairly compete with them in other respects. By the adoption of this rule all jostling in riding at the same weak places is avoided, which is one of the most dangerous practices that can be attempted in the hunting-field. If there were not some rule of this kind, two men riding jealously at one another would be constantly going together at a gap or thin part of a fence, neither would give way, and the two horses would rise at the same moment, and one or both would almost inevitably fall into the ditch. Such an accident does sometimes occur with young men ignorant of the rules of hunting, and when it happens it leads to a very nasty fall, because both horses being down alongside one another there is great

risk, not only of a bad fall, but of a kick from the opponent's horse. But if riders will always keep their proper distance from one another, and ride square at their fences, nothing of this kind will happen. It is always pretty clear in getting over one fence what is the proper place for each man to take in the next. If there is a decidedly weak place, and only one, it belongs to the person who is opposite it; and his companions should either go to some other, or wait their turns after him. Of course there are cases where it is difficult to decide this, but, generally speaking, it is pretty clear in practice, unless a man in his heat and jealousy is wilfully blind. I have already observed that riding to hounds is now a complete race, and few men would care to indulge in it without the excitement of competition. The hunting of the hounds is merged in it, and forgotten for it; and they are only made the means of pointing out the direction of the line which is to be taken by the competing field.

A Familiar Acquaintance with the Country which is being crossed should, as far as possible, always be obtained; and the tyro should learn the chief land-marks, and their bearings upon the covert which is most likely the point of the fox; then, if hounds are inclined to run in slight circles, always bear towards that point, but not too much, for fear of being thrown out; but in all cases *keep near the hounds* as much as is practicable. A neglect of this last precaution is often attended with an entire loss of place in the remainder of the run; and it is much easier to keep a place than to regain it. Many a good rider can take everything before him when he is sure of being right, but when once he is thrown out he is completely lost, and, instead of gaining on the hounds, loses ground at every fence. Knowledge of country, and a good eye for it, are the two essentials; and neither will serve alone. Short-sighted men are here lamentably deficient, and they are often obliged to submit their judgment to that of some friend, and follow steadily in his wake.

Never Ride your Horse till he is Blown, unless your are pretty sure of a second, or that the fox is at his last resource. Sometimes, in the ardour of the contest, when the fox is evidently sinking, and only a few front-rank men are left with the hounds, a man may be excused for distressing his horse; but at other times it is neither humane nor sportsmanlike, because every experienced horseman ought to know when his horse has had enough, and if he perseveres beyond that time it can seldom do more than make the difference of a few fields. A pull at the right time will do wonders, and, instead of causing the loss of place, will often improve the position. It is not going straight over sound land that distresses a horse, but the making use of him over deep ground and at the wrong time. Many men seem to know no difference between sound turf and rotten or wet arable, and will kick their horses along over high ridge-and-furrow in wet clay at a pace which no horse can bear for more than a mile or two in such a country. A "workman" would look out for headlands or foot-paths, &c.; and would, by a slight *détour*, gain upon those who disdained to leave the line even for a few yards. Wet and sticky ridge-and-furrow tires a horse dreadfully, and the consequence is, that if he is pushed over them he speedily loses his powers and wind, and falls in a very ugly way at the first fence he comes to of a size above the average. Hence, every man who aspires to go well to hounds must learn to be "a judge of pace," and should endeavour to make out the signs of distress, and the best way of avoiding it. So much depends upon condition and breeding, that it is very difficult for a man with a strange horse to know what liberties he may take with him. Some well-bred ones will be blown, yet if nursed they will come again and again, while the dunghill animal will give up when once he has lost his powers, and is gone for that day at least. In ascending steep banks, a careful and active horseman will dismount and lead his horse up, and by so doing often gain a mile or two upon his less humane and cautious antagonist. It is in all these little points that experience tells; and yet they make up the difference between the first-flight man in the beginning of the run, and the one who is sure to be in at the death.

Always let your Line be suited to your Weight as adapted to your horse. A light-weight will frequently get over timber in sound ground easier than a

strong bullfinch. Indeed, when a horse is used to timber, and is properly ridden at it, he will take it with less trouble to himself than almost any other fence. The difficulty is to be sure of your horse, and that he is not pumped out; for a careless hunter is always unsafe at timber, and a mistake there is almost sure to cause a fall. A tired horse should seldom be put at a strong gate, or post-and-rail, if it is possible to choose any other fence; and if he is sent at it, it must be accompanied with a little extra persuasion, and preceded by careful handling. For the above reason some rather heavy weights, who are good judges of pace, and thoroughly acquainted with their horses, will take a line of gates with great ease, and thereby gain much ground; but it requires judgment and some pluck; and the practice will seldom take a man through a season without a fall over timber, if he indulges in it to any extent and is above fourteen stone. But when the horse is fresh and the line suits, timber may generally be selected with advantage by all under that weight, mounted on good jumpers of that particular kind of fence. On the other hand, the heavy weight has the pull at strong thorn fences, when his momentum carries him safely through what will inevitably drag a light man off his horse, unless he is very strong in the saddle. It is all nonsense to assert that a heavy man can live with a light one, both being well horsed and *equally good horsemen*. A bad rider of sixteen stone, with judgment, will often beat a bad rider of ten stone without, because his weight keeps him in the saddle, and his horse cannot pull him about as the other can the weaker rider; but a *good workman* of ten stone weight will be able to face anything, and ought never to leave his horse's company unless both are down. This last fact is fully recognised by really good men; and many a one of the above weight will go through season after season without doing so, although riding in the foremost rank. There is every excuse for heavy men getting falls oftener than they do, but the necessity of the case makes them use their heads to save their bones. But with light-weights on good horses, I am satisfied that the above rule holds good, and that the fact of a fall *from* a horse in the hunting-field is with them an evidence of bad horsemanship. Presence of mind is of the greatest importance in all accidents, and the man who can retain it fully when in trouble is almost sure to come out unscathed. It is astonishing what mistakes can be rectified by sitting steadily and assisting the horse in struggling on his legs; and I never could see the advantage of quitting the saddle wilfully when a horse is half down, and as some boast, "rolling out of his way;" still it is quite true that although a good rider escapes a good many accidents which befall the awkward one, yet when he does meet with one it is generally a bad one. For instance, in falling over a gate the good rider falls with his horse, and together they roll, perhaps absolutely making a somersault, with a crash, and a crush too, accompanied by a serious or fatal mischief. The same accident occurs to a loose-seated gentleman, and he is thrown clear of his horse, and escapes with only a little mud and a slight shaking. This accounts for the number of falls which some men get without suffering, and for their caring so little about them as often to ride at a fence with the full belief of landing on their heads or tails, instead of keeping their saddle. This is called "riding for a fall;" and though apparently very bold and courageous, it is not nearly so dangerous as it looks. If they go fast enough with their loose seat they are off the saddle almost before the horse touches the ground, and by a little scrambling, added to the first shoot, they are almost sure to escape "scot free." Unless the fall is on hard ground it is not felt; but when a road is visited, or when the ground is hard, as sometimes seen in autumn or spring, it is a serious matter.

In Putting the Horse at his Fence, be careful to collect him well into that pace which he does with most ease to himself, maintain this up to the fence, and do nothing but keep him straight till he is rising; then ease his mouth by leaning forward, and be careful not to confine it while he is making his effort. In descending, lean well back in the saddle and take hold of the horse's mouth without absolutely checking him; using the snaffle only, if there is a double-bridle. Assistance is wanted more in balancing well back than in holding up, the horse's head; and so long as this is done, and he is simply

reminded that he is not intended to fall, he will save himself better than his master will save him. A loose rein is at all times a bad style—not because the horse wants assistance, but because he learns to gallop with too long and reaching a stroke; but, on the other hand, a confined head will always lead to one of two things—either the horse is pulled into his fence, or he gets dull in his mouth and leans on his rider's hands at all times. It is the most difficult point in horsemanship to manage the mouth with nice handling over a country, and one which is generally the last to be obtained. It is here that the delicate hand of the lady shows to advantage, and, coupled with her light weight, often enables her to beat her heavy companions.

Ride with the Knees and Calf chiefly; do not depend on balance, though it must be called in aid; and, above all things, do not depend upon the bridle. The best hunting-seat is one with a moderately short stirrup; the knee should be upon the padded part of the flap of the saddle and in front of the stirrup-leather; the heel well down, and the foot pointing nearly straight forward. The weight of the body cannot well be too forward on the saddle, and the fork, therefore, should be close upon the pommel. With heavy weights this is of importance; and the man of sixteen stone who sits far back upon his saddle rides like a bag of wheat, and soon tires his horse. The weight should not have to be lifted in the stroke of the hind-legs, but should occupy the centre of motion between the rise and fall of the fore and hind quarters. The reins are generally taken in both hands nowadays; and with a horse likely to refuse his fence, or which is at all in want of assistance, this plan is the most cautious; but with an accomplished hunter, having a light mouth, there is no necessity for the precaution, and the whip-hand may be carried in an easy position by the side of the body. The old plan of raising it in the air is now exploded, and is considered "slow;" it is bad, because when assistance is wanted the hand is a long way off the bridle, and while coming to the rescue the chances are that the time is gone by for its successful employment. At the same time there are occasions—as, for instance, in a drop-leap—when the body cannot be sufficiently thrown back without abandoning the reins with the right hand, or else slipping them so far through both hands as to make it difficult to recover the power over them quickly enough to aid in case of a mistake.

In Ascending Hills it is often expedient to make a zigzag; but in descending you can never go too straight, as the opposite course often leads to a dangerous slip on the side, with a crushed knee or ankle as a consequence. Few horses fall forwards, and they always manage to save themselves by slipping down on their haunches. This is a point of great importance, and should always be strictly attended to. These few remarks, in addition to those applying to Horsemanship in general, will perhaps be useful to all who have no experienced friend ready to afford a practical demonstration of the same fundamental points. One actual lesson in the field is worth all the reading in the world; but, in default of this, the preceding observations will serve to assist the young aspirant for honours in riding to hounds.

The Varieties of Fences which present themselves in crossing the different countries of England, Wales, Scotland and Ireland are very great; but the following will comprehend nearly all:—First, the simple thorn-fence; second, sheep-hurdles; third, post-and-rails; fourth, double post-and-rails; fifth, gates; sixth, plain banks; seventh, ditches; eighth, brooks; ninth, banks with ditches, single or double; tenth, banks with thorn-fences; eleventh, banks with single or double ditches in addition; twelfth, high fences, which must be ridden through, called "bull-finches:" thirteenth, wide banks, with wattled or railed-fence on each side of a young fence, constituting what is called the "double;" fourteenth, stone-walls.

The Variations in Leaping are—first, the standing-leap; second, the flying leap; third, the "on-and-off" leap; fourth, the "in-and-out" leap; fifth, the creeping style; sixth, the drop-leap. The word leap is always synonymous with jump, and they are both used at present almost indiscriminately. At times, however, the one word has been voted "slow," and at others it has been replaced by its rival.

The Standing-Leap is taken only over low timber, or other small places,

or where it is dangerous to do otherwise —as, for instance, under a tree, which would strike the head of the rider, if the horse were ridden under it at any pace above a walk. In this kind of leap a perfect hunter is required which has long been accustomed to the style; and where that is the case he will gather himself up, and tilt himself over high stiles, or other similar places, in the most extraordinary way. Wide places should never be attempted without a run; and indeed, seldom require the standing jump. In practising a horse in this mode, he should be brought up to the place, and then suffered to take it at his own distance, and *with his head quite at liberty*. No horse can bear confinement while jumping standing, and this is one reason why so many fail in effecting it properly. Some imperfectly taught hunters are apt to get too close to the fence before rising, and in this way they sometimes fail to clear it with their fore-legs; others, again, take it at too great a distance, and then catch it with their hind-legs, which is almost worse. This accident often happens at stiles where there is a footbridge on both sides, and the horse must take them standing, or run the risk of slipping on one or other of the bridges. The consequence is that the stifles are caught by the stile, and the horse is arrested by it, and yet fails to get a footing for his fore-legs, from the presence of the bridge in front. Sometimes he is actually hung there, and can neither get back nor forward until the stile gives way. There is also great danger, in all cases of jumping timber standing, of the horse getting his legs between the bars after a mistake. It is a frightful accident, as it so often leads to a broken leg. The only remedy is to get some one to sit upon the horse's head so as to keep him down, and then, by means of stirrup-leathers, to attempt to pull the leg back; but it requires great coolness and judgment to avoid doing mischief, and sometimes the bars are so close together, and the leg is so firmly jammed, that the saw applied to the timber is the only possible resource.

THE FLYING LEAP may be either slow or fast, but the former is that which is usually practised in hunting. I have shown, in the description of the steeplechase, that in that species of getting across-country the leaps must be all taken quickly at a good pace, constituting really a flying leap. But in riding to hounds, the ground has not previously been gone over, and until the horse actually reaches the fence and is just going to make his spring, he cannot tell what he may have to surmount. If, therefore, he is ridden very fast at his fences, there is no time to calculate the effect, and it will constantly happen that a mistake follows; but if a leisurely hand-gallop or canter is practised, with the horse well on his haunches, he can measure exactly his taking off, and the amount of muscular effort which will land him on the far side of the ditch, if there is one. It also provides for the power of stopping entirely, if there should happen to be a pool, or a gravel-pit, or a sunk road beyond.

For these reasons, most men prefer the steady jumper; and he will certainly go through a season with the smallest number of mistakes. At all places where height is to be jumped, the slower the horse goes at them the higher he can rise, provided only that he is in a steady stride, with his hind-legs well under him. A trot does not succeed so well, because in it both hind-legs do not act at one moment, and they are not both equally ready for the spring. Nevertheless, some hunters are very clever in rising from the trot; and the celebrated Vivian, of steeplechase fame in its early days, was remarkably so. I have seen him get over high timber from the trot in a way which would puzzle our modern steeplechaser to imitate, either in height or style. For my own part, I should always prefer a horse to go a pretty good pace at his fences, provided he is willing to be stopped, if necessary. An animal which is under no control is always dangerous; but short of this, it always appears to me that there is no medium, in point of comfort and safety, between the decided creep, which can scarcely be too slow, and the steady hand-gallop.

In properly collecting the horse, and putting him at his fence, there is a great art, and nothing but practice will give it in perfection. Double posts-and-rails require a great deal of collecting and rousing, and the horse must go pretty fast at them, as also must he at all wide jumps, including water in all its forms. One

essential is, that the horse shall have confidence in his rider; for if he thinks he *may* turn to the right or left he will most probably do so, unless he is very fond of jumping. Nervous men communicate their feeling to their horses, and though it may be difficult to explain how it is done, there is no doubt of the fact. It is remarkable how soon horses find out what kind of man they carry, and how they alter under different hands. This is partly owing to a mismanagement of the mouth, but in great measure also to the trepidation of the rider. Unless, therefore, he has full confidence in his own courage, he need never expect his horse to go steadily and straight at his fences.

The collecting is much easier than the management of the bit at the leap itself, for two opposite things are to be done, and the delicate point is to hit the moment of change from one to the other to a nicety. The first is to "catch hold of the horse's head," as it is called—that is, to bear more or less upon the mouth, pull the horse on his haunches and rouse him, either by voice, heel, or whip. This lasts till the moment of the effort made to rise over the obstacle, when the head should be released, so that the horse may have all his bodily powers at his command. If the head is confined the haunches do not act fully, because in springing the head is protruded, and pain is given by the bit, if it is still held fast; and hence, to avoid the pain, the extension does not take place, the leap is not made with sufficient spring or power, and the horse alights too near the ditch, if there is one, or possibly in it. But in releasing the head judgment is required, for if the rein is too loose the horse is apt to alight in such a position that he is "all abroad," and without great help he will often fall; hence, most good performers, though they do not absolutely confine the head, yet they keep a very gentle and delicate hold of the mouth, and not only thus prevent the horse over-extending himself, but are also prepared to assist him if he is inclined to fall. This is the finished style of riding, and is only in the power of a man with a good seat as well as good hands. Both are wanted, because without the former it is impossible to avoid "riding the bridle"—that is, holding on by it as well as by the saddle; and without good hands that delicate management of the bridle which I have attempted to describe is impracticable. Everyone ought to be taught to ride without a bridle, depending upon the saddle alone; and without such a means of acquiring the art few people attain that perfection of handling which is called "having good hands." It is always desirable on horseback, but never more so than in getting across country.

Lifting the horse is sometimes attempted with the bit, but I doubt its utility. When a horse is likely to touch the top bar of a gate, or in any way to use too small an effort, a stroke of the whip down the shoulder is the best lift. Rousing and collecting are quite distinct from lifting, which I believe to be a myth altogether. In the same category I should place the "second stroke" of the horse, which some people suppose is given in the air; and even Mr. Apperley was of that opinion. It is so thoroughly in opposition to all the laws of mechanics, that I must beg to differ from him and his supporters; and though I am aware that an instinctive effort is often made to increase the leap, yet I must doubt its utility. The world might be moved with a fulcrum, but without it not even a feather will stir. Now the only fulcrum for the horse at this time is the resisting power of the air, which is inappreciable, and consequently I cannot subscribe to the above commonly received opinion. If this conclusion is correct, neither voice, spur, nor whip will have effect after the hind-feet have quitted the ground; and that such is the fact I am thoroughly confirmed, both from theory and practice.

The "On-and-Off" Leap is required chiefly where banks are to be got over, and it is never attempted except at a slow pace; sometimes even from a walk, or while standing. Great care must be taken to give the horse his head, and he should only be assisted at the moment of touching the ground. Many horses are very clever at this kind of jumping, and especially the Irish breeds, which will top a bank, or even a wall, like a dog, touching with all four legs almost at the same moment, and doing it very neatly and quickly. Most English horses, however, raise themselves on to the bank

with their hind-legs, and then dwelling for a moment on the top, they extricate their fore-legs deliberately, and descend slowly into the next field, using just sufficient force to clear any obstacle in the way, such as a ditch.

"In-and-Out" Jumping requires great practice, and very few hunters attain it in perfection. It should be attempted very slowly, and at a slight angle with the fence, which gives the horse greater room to fall and rise again in the space between. He must be well on his hind-legs to do it, and should have very little interference with his head. Double posts-and-rails, or double hurdles, are almost the only kinds of fence requiring this style of jumping, which is much safer with a finished hunter than the attempt to fly both at once.

In Creeping, good hands and great quietness in the saddle are the chief elements of success, and without them both no one is likely to do much in this particular style; hence it is that so few men can "creep" well, even though they have horses accustomed to it under other hands. When the horse has been thoroughly taught to creep, the head may almost be left without control, merely guiding him quietly to the gap, and then letting him take his own way; but where the horse has to be made to creep, a rein should be taken in each hand, and the head guided as if with a silken thread, to the right or left, or wherever the animal is required to go. When a horse is thoroughly accustomed to his rider's hand he will creep in the most clever style, and will never attempt to rise into a leap without the sign being given him by the heel, and by gently touching the mouth. It is a thing, however, that nothing but practice will give, and even that continued for a long time sometimes fails.

The Drop Leap can scarcely be too slow, unless there is a ditch or brook to be crossed at the same time. Even when there is a fence to be taken before the drop, the pace must never be forced, or the fore-legs are sure to give way and the nose touches the ground, followed by a severe fall. In dropping, the balance of the horseman should always be well back; the shoulder-blades almost, or quite, touching the horse's croup; the head of the horse may be relieved from all pressure of the bit until the fore-legs actually touch the ground, when a slight assistance will generally be prudent.

The Simple Thorn-Fence may be either in a state of nature or cropped or wattled with binders. The first is a very easy jump, and seldom occasions a fall, because, even if the horse strikes it, his legs pass through and no harm ensues. The cropped fence is dangerous, because the sharp stubbs sometimes occasion a severe wound, to such an extent as to "stake the horse," as it is called, and endanger his life from the injury of some important organ. Wattled-fences are often very strong; and even when they are as thin as in Warwickshire they are made so strongly that no horse can break through them. In this country they resemble an espalier apple-tree in appearance more than an ordinary fence, and they must be taken with great care by strange horses, which are very apt to strike them, from being able to see through them; and if they do, they are almost sure to fall over, or sometimes even back again.

Sheep-Hurdles may be taken in any way, as from their weakness they seldom occasion a mistake; from which quality they are most commonly used as a means of teaching to jump. In some countries, however, a stronger wattled-hurdle is employed, and it is much more unyielding in its nature. Neither, however, is often more than three feet in height.

Post-and-Rails are, when new, the most firm and unyielding kind of timber-fence, and should on that account be taken very carefully, with a good collecting of the horse, and a blow of the whip down the shoulder, or a free use of the voice and spur. A steady collected hand-gallop is the best pace to go at them.

Park-Paling is a very dangerous kind of timber, because the legs are so apt to be held in the forks between the pales. It should, therefore, always be taken with great caution.

Double Posts-and-Rails must either be taken flying at a good and fast pace, with a liberal use of the persuaders, or else the "in-and-out" jump described above is to be adopted. In all cases this kind of fence is a dangerous one, and many otherwise bold riders carefully eschew it on all occasions.

Gates may be taken like posts-and-rails, but they are more dangerous, because they are generally across ground sticky and deep from the passage of cattle; and also, from being sometimes unfastened, they give way a little on being struck by the knees of the horse, and thus insure his fall in a very awkward manner.

Plain Banks merely require the "on-and-off" style already described.

Ditches must be taken with great warning and persuading with the spur, if wide enough to require it; but if narrow—that is, not exceeding six or eight feet—with sound ground on the landing side, a slower pace will suffice, or even sometimes a standing-jump.

Brooks, unless fordable, will demand a good pace, catching fast hold of the head, first of all, and driving well at the brook, without confining the head, when taking the leap. Wherever there is a chance of refusing, both hands should command the bridle, and the horse should be carefully watched, lest he turn either way and "baulk" the leap.

Banks with Ditches only require a little more care than without them; and when the ditches are wide, the horse must be ridden a trifle faster.

Banks with thorn-fences must be treated according to the nature of the fence, which, if open and straggling, and without stubbs, does not interfere with the ordinary mode of taking the fence as a simple bank; but if the thorn-fence is strong and pleached, the whole must be taken flying, with sufficient pace to clear the width, whatever that may be.

The same remarks apply to the next division—viz., banks with thorn-fences and single or double ditches, except that they require great caution and more jumping power.

Bullfinches must either be taken at full swing, using the arms and hands as a guard for the face, or they may be passed by creeping, at which some horses are very clever; but a thick fence of this description can seldom be got through except at full charge.

Wattled-Fences on each side of a bank, called "doubles," are very difficult to get over when high and strong; the only plan is to jump on to the bank and off again, as they are generally too wide to take at once.

Stone-Walls are the easiest of all fences when the horse is fully aware of their nature. The eye should always be on the look-out for very low places, which should *not* be selected, because they are often the boundaries of gravel-pits or stone-quarries, at which parts high walls are not required. Generally speaking, the safest place to take is a part of the wall of an average height. A slow hand-gallop is the best pace, and the horse should be well collected on his haunches.

Wire introduced through thorn-fences to strengthen them must be carefully avoided in countries where it is known to exist. Nothing is so dangerous, as it not only seriously injures the horse, but gives a very severe fall to the rider, and yet it cannot be seen before "taking off."

PART II.

HORSE-RACING.

BOOK IV.—MATCH-TROTTING.

CHAPTER I.

Sect. 1.—Description of Trotting-Matches.

This amusement, formerly popular in this country as well as in America, has now become almost a dead letter in our annals of sport. Occasionally one sees a report of a trotting-match between Mr. Smith's Tinker and Mr. Brown's Polly, or some such names, for 10*l.* a side, but nothing to call for the attendance or interest of the admirer of horse-flesh. The following paragraph, which appeared in our chief chronicle of this kind of sport, marks its present condition and character:—"*Trotting Extraordinary.*—At Long Sutton, Lincolnshire, on the 26th July (1855), the Norfolk Cob, four yrs., 14½ hands, was matched to trot one mile in three minutes, which he completed in two minutes forty-seven seconds; and on the same afternoon was matched to trot four miles in thirteen minutes, which he also completed in twelve minutes nineteen seconds, although he threw his fore-shoe within a mile and a half of the winning-post." This match makes a poor substitute for the exciting contests of Rattler and Driver, or Rattler and Rochester, when thousands changed hands, and when also the performances were vastly superior in point of speed. Driver, who was little more than 13½ hands high, performed a very great feat in trotting seventeen miles within the hour. Tom Thumb did eighteen miles within the hour; and 100 miles in seven minutes over ten hours in harness. But no English horse can compete with the American trotters, many of which can accomplish a mile in 2½ minutes.

These horses are very common-looking; generally of middle-size, and with plain hind-quarters, but good game-looking heads, and legs and feet of iron. In this last point, and in stoutness, they are unrivalled; and there is no doubt that there are very few English horses which could repeat Tom Thumb's feat of trotting 100 miles in a little over the ten hours. Still, I believe there are or have been some; and that, if expressly selected and trained for the task, it might be done by English horses with as much ease as by him. I have myself driven eighty miles in a heavy gig within twelve hours, more than four hours of which were occupied by a rest in the middle; and I am quite sure that the animal would easily have gone twenty miles further without the rest, or with only sufficient for taking her feeds; and this was without any training except her usual work. But Tom Thumb's performance was a very great trial of stoutness; and the Americans, I think, may claim a superiority in this respect, as well as in the pace at which the trot is performed. The fact is, that the old puritanical legislators of America prohibited racing, and our astute cousins evaded the strict letter of the law by having trotting instead of running contests; they accordingly bred horses especially for that purpose, and have succeeded in a wonderful manner in doing what they wished, as they do in most of their undertakings, when at all practicable. It may be interesting to compare an account of the trotting-matches of America with those of our own island. The following report of one is extracted from Murray's "Lands of the Slave and the Free;" and no doubt it gives a good idea of their races as conducted at the time it was written; but great improvements have been made since then, particularly as regards speed.

Description of a Long Island Trotting-Match.—"The race-course is a two-mile distance, perfectly level, on a smooth and stoneless road, and forming a complete circle. Light trotting-waggons are driving about in the centre, taking it easy at sixteen miles an hour;

outside are groups of 'rowdies' making their books, and looking out for greenhorns, an article not so readily found at Long Island as at Epsom. The race is to be 'under the saddle,' and the long list of competitors which had been announced has dwindled down to the old and far-famed Lady Suffolk, and the young and unfamed Tacony. A stir among the 'rowdies' is seen, followed by the appearance of Lady Suffolk. I gazed in wonder as I saw her—a small pony-looking animal, moving her legs as though they were in splints, and as if six miles an hour were far beyond her powers. Soon after Tacony came forward, the picture of a good bony post-horse, destitute of any beauty, but looking full of good stuff. The riders have no distinctive dress; a pair of Wellington-boots are pulled on outside the trousers; sharp spurs on the heels —rough-and-ready-looking prads these. The winning-post is opposite the stand; the umpire is there with a deal board in his hand; a whack on the side of the stand 'summons to horse;' and another 'summons to start.' The start is from the distance-post, so as to let the horses get into the full swing of their pace by the time they reach the winning-post, when, if they are fairly up together, the cry 'Off' is given; if it be not given they try again. (When speaking of the time in which the mile is completed, the fact of its commencing at full speed should always be borne in mind.) On the present occasion there was no false start; the echo of the second whack was still in the ear as they reached the winning-post neck-and-neck. 'Off' was the word, and away they went. It certainly was marvellous to see how dear old Lady Suffolk and her stiff legs flew round the course; one might have fancied she had been fed on lightning, so quick did she move them, but with wonderfully short steps. Tack, on the contrary, looked as if he had been dieted on Indian-rubber balls. Every time he raised a hind-leg it seemed to shoot to his own length ahead of himself; if he could have made his steps as quick as the old Lady, he might have done a mile in a minute nearly. Presently Tacony breaks up, and ere he pulls into a trot a long gap is left; shouts of 'Lady Suffolk! Lady Suffolk wins!' rend the air; a few seconds more and the giant-strides of Tacony lessen the gap at every step; they reach the distance-post neck-and-neck: 'Tacony wins!' is the cry; and true enough it is, by a length. Young blood beats old blood; Indian-rubber balls 'whip' lightning. Time, five minutes. The usual excitement and disputes follow; the usual time elapses, whack number one is heard—all ready —whack number two; on they come; snaffle-bridles—pulling at their horses' mouths as though they would pull the bit right through to the tips of their tails. 'Off!' is the cry; away they go again. Tacony breaks up; again a gap, which huge strides speedily close up again—Tacony wins. Time, five minutes five seconds."

In a subsequent part of his travels in America, Capt. Murray alludes to a race in another locality:—"The race-course at Philadelphia is a road on a perfect level, and a circle of one mile; every stone is carefully removed, and it looks as smooth and clean as a swept-floor. Upon the present occasion the excitement was intense. An antagonist had been found bold enough to measure speed with 'Mac'—the great Mac, who while 'whipping creation,' was also said never to have let out his full speed. He was thorough-bred, about 15½ hands, and lighter built than my rawboned friend Tacony, and he had lately been sold for 1600*l*. So sure did people, apparently, feel of Mac's easy victory, that even betting was out of the question. Unlike the Long Island affair, the riders appeared in jockey attire, and the whole thing was far better got up. Ladies, however, had long ceased to grace such scenes. Various false starts were made, all on the part of Mac, who, trusting to the bottom of blood, apparently endeavoured to ruffle Tacony's temper, and weary him out a little. How futile were the efforts the sequel plainly showed. At length a start was effected, and away they went, Tacony with his hind-legs as far apart as the centre arch of Westminster Bridge, and with strides that would almost clear the Bridgewater Canal. Mac's rider soon found that in trying to ginger Tacony's temper he had peppered his own horse's, for he broke up into a gallop twice. Old Tacony and his rider had evidently got intimate since I had seen them at New York, and they now thoroughly understood each other. On he went with

giant strides; Mac fought bravely for the van, but could not get his nose beyond Tacony's saddle-girth at the winning-post. Time, 2 minutes 25½ seconds. Then followed the usual race-course accompaniments of cheers, squabbles, growling, laughing, betting, drinking, &c. The public were not convinced; Mac was still the favourite; the champion-chaplet was not thus hastily to be plucked from his hitherto victorious brow. Half an hour's rest brought them again to the starting-post, when Mac repeated his old tactics, and with similar bad success. Nothing could ruffle Tacony, or produce one false step; he flew round the course, every stride like the ricochet of a 32-lb. shot. His adversary broke up again and again, losing both his temper and his place, and barely saved his distance as the gallant Tacony, his rider with a slack rein and patting him on the neck, reached the winning-post. Time, 2 minutes 25 seconds. The shouts were loud and long; such time had never been made before by fair trotting, and Tacony evidently could have done it in two if not three seconds less. The fastest trotting ever accomplished before was 2 minutes 26 seconds. The triumph was complete, Tacony nobly won the victorious garland; and as long as he and his rider go together, it will take, if not a rum 'un to look at, at all events a d—l to go, ere he be forced to resign his championship."

Since the time of Tacony, his performances have been completely eclipsed, as will be seen by reference to the particulars given in Sect. 6.

Sect. 2.—The Match-Trotter.

The Horse used for the purpose of trotting matches in this country is an accidental variety of the hunter or hack. Some, it is true, are, or rather were, bred expressly for the purpose, but nowadays such an attempt would scarcely pay, since the outside price of a first-rate trotter, *as such*, would seldom reach 100*l*. If he be also a good hack or harness-horse, and with good figure, suitable for a gentleman's use, he might perhaps command a few pounds more, but certainly not exceeding 150*l*. Hence with this boundary as a prize, and with numerous blanks in case of failure, the speculation would be a poor one. Several trotting stallions are, however, used throughout the country for the purpose of improving the breed of hacks and harness-horses; and from their stock a trotter of more than usual powers sometimes is selected and used for match-trotting, as was the case with Rochester, who was supposed to be by the Norfolk Phenomenon. Generally speaking, these horses are about 14½ hands high, or not exceeding 15 hands. Rochester, who was one of our very best match-trotters, was about this height. But there is no reason why such beauty of form should not coincide with excellence of performance any more than is the case with the ordinary racehorse, where elegance generally coincides with excellence; and the best horse of his year is often also the best-looking. In some cases trotters have been nearly, or quite, of Eastern blood, as, for instance, Infidel, by Turk; Scott, by Blank; Pretender, by Hue and Cry, out of a thorough-bred Pretender mare, &c.; and in America they are generally descended from thorough-bred sires for many generations, their pedigrees now being as carefully looked after as those of our racing stock in this country. Generally speaking, however, trotters in England have been less than half-bred.

Sect. 3.—The Rider.

The Riding of Trotters, so as to extend them without breaking, is a task of great difficulty, and requires a union of good temper, seat, and hands seldom found together. These horses almost all pull considerably, and, whether English or American, can scarcely be made to do their outside performance without a strong arm and a steady hand. They are generally ridden in a plain Pelham or a snaffle, and sometimes with a straight bit; but a Pelham, or common curb, is required to pull them up short when they break, or, as the Americans term it, when they "break up." At this time if they have only the bit with which they have ordinarily ridden, they can scarcely be stopped in time to satisfy the umpires, and hence the necessity for a severe control in the shape of one or other of the above curbs. The seat requires to be very steady, and with as little rise and fall in the trot as can be managed, so as not to throw

the horse out of his stride, and yet enough to ease him in it. Above all, care must be taken, that while urging him to his utmost, he is not urged too far, as in that case great loss of ground is sustained by the break. WEIGHT is of some importance in match-trotting, but a moderately heavy man who can hold his horse down to a trot is better than a "feather" who allows him to break continually. Mr. Daniell remarks: "In 1800, Robson's brown mare, Phenomena, attracted considerable attention according to Mr. Lawrence, by trotting 17 miles in 56 minutes, and afterwards in 53 minutes, when her owner offered to match her to perform 19½ miles within the hour; but the challenge was not accepted. These were, doubtless, extraordinary performances; but it was not considered, either by the public or by the trotting-jockeys themselves, how much was to be allowed in the estimation on account of the light weight she carried—namely, a 'feather' *being ridden by a lad belonging to the racing stables, weighing about 5st.* She had not more speed with a 'feather,' probably not so much, as former capital horses carrying 12st. and upwards, several of which would in all probability have performed, with comparative ease, as much in an hour as she did; or even perhaps have actually accomplished the *ne plus ultra* of trotting 20 miles in one hour. Formerly it was a maxim in trotting races, that weight did not form a considerable object, and that a rider of light weight was not calculated for the purpose, whence the matches were always made with catch-weights, and very often a heavy one chosen in preference, as was the case in Archer's match, in which he carried nearly 12st."

SECT. 4.—THE COURSE.

THE TROTTING-MATCH COURSE is generally a tolerably wide, level, and even road, without loose stones, or other impediments. It is seldom free from the disadvantages of steep hills or broken stones for more than a few miles, and for this reason, in most matches of more than four or five miles, it is provided that the race shall come off by trotting a certain distance, say five miles out and in, as often as will make in the whole. In America, however, the trotting tracks are usually circular, and made especially for the purpose.

SECT. 5.—LAWS.

THE ONLY LAWS relating to match-trotting are the following:—There shall be an umpire appointed on each side, with a referee; also a timekeeper for each party with stop-watches. The umpires start the horse, and stop their watches at the same moment, having previously set them exactly with the timekeepers, who have only to stop theirs at the moment of passing the winning-post, when the difference between the two shows the time actually engaged in the match. In harness, if a horse breaks, the opposite umpire cries "back," and the horse is obliged to be stopped, and to back the wheels, of which operation ever so little is enough; after which he may start afresh. In the saddle, if the horse breaks, he must turn round at the order of the umpire, and if his rider refuses, he forfeits the match. All other points are embraced in the conditions, which vary with almost every race.

SECT. 6.—PERFORMANCES.

IN ENGLAND, previous to the introduction of the American trotter, the utmost speed attained was a few seconds under three minutes per single mile. Sixteen miles within the hour were about the limits of the horse's powers of trotting, with the heavy weight of 12st. up, however. In November, 1810, Mr. Fielder's horse trotted 10 miles in 30 minutes 10 seconds, according to the papers of the day; but there is great doubt of the correctness of the time, though the performance of Robson's mare, already alluded to, is nearly as good; and her owner's offer, if accepted and carried out successfully, would have exceeded it, on account of the double distance. The Americans in this country have never quite come up to their home feats; but Mr. Osbaldeston's Rattler completed 5 miles in 2 seconds under 14 minutes, being at the rate of 2 minutes 47¾ seconds per mile.

This, however scarcely bears comparison with some of the recent performances on the other side of the Atlantic. Sixteen years ago (in 1859) great enthusiasm was caused by the

doings of the celebrated Flora Temple, who trotted a mile in harness in 2 min. 19¾ sec., and did two miles in the same season in 4 min. 50½ sec. Some seven years elapsed before this time was much improved on, and then Dexter did the mile in 2 min. 17¼ sec. Occident's time in 1873 was 2 min. 16¾ sec. In 1874 Lulu accomplished the same feat, and American Girl reduced the time to 2 min. 16½ sec.; but both had to succumb to Goldsmith Maid, who, after making several "best times on record," one after another, as 2·16, 2·15½, and 2·14¾, finally threw every previous performance into the shade by trotting a mile in 2 min. 14 sec., at Boston, on Sept. 14, 1874. This surprising feat was at the rate of very nearly 27 miles an hour.

With regard to long-distance races, 20 miles within the hour has never been trotted publicly in England, though Sir William is said to have accomplished it in a private trial; but it has been done several times in America, the fastest time having been made by a horse named Capt. McGowan, who trotted 20 miles at Boston in 1865 in 58 min. 25 sec. The fastest 100 miles was accomplished by Conqueror, at Long Island in 1853, in 4 min. 7 sec. under nine hours, or nearly an hour and a quarter less than Tom Thumb's performance in 1829 alluded to in page 543.

Sect. 7.—Training.

The Preparation for these matches varies according to their length; if the distance is very short there is nothing gained by too long a time being bestowed upon it, and if the horse is in ordinary stable condition, a fortnight or three weeks will amply suffice. Walking exercise will be required to the usual extent; and the distance to be trotted should be gone over every day *on ground which will not shake the joints;* unless the match is made to trot more than 8 or 10 miles. Nothing does so much harm as the constant rattling over hard roads, which causes a soreness of the joints and a tenderness of the feet highly inimical to fast pace. Turf, however, is seldom suited to these horses, and they cannot often be made to trot at their best rate over this kind of ground; hence it neither suits as a course nor as a training-ground, except for walking exercise; and the trotter must be practised and trained over the road; but at the same time the sides, which are softer than the middle, answer all good purposes without any of the bad. If the horse is too lusty he must sweat, as in ordinary training; and it is better to sweat him on the gallop than the trot, because the weight of clothes has a tendency to reduce the pace. Some horses, however, can trot faster than they can gallop, and with them it would be absurd to attempt to sweat them with the slower pace in preference to the faster. Towards the last ten days the horse should be made to do his best; and if the match is against another, and not against time, he must be used to doing his task in company, or he will be so hot when he is actually engaged in the match that he will be sure to break. If the distance is a long one, a preparation of two months may be necessary, with at least four hours' walking exercise per day, and a long steady trot of about 8 or 10 miles in addition. This will be found sufficient to bring any horse up to the mark, and is better than overdoing the thing. For these long distances most horses require a few sweats, as they should carry no superfluous flesh; yet at the same time they may easily be drawn too fine, and made weak instead of stronger by too much sweating. All this, however, as in the training of the racehorse, must vary with each animal, and no rule for all can be laid down.

Sect. 8.—Match-Carts and Harness.

The Carts, Harness, &c. for these feats are very light; some of the former, with five-foot wheels, being little over 100lb. A breast-strap with these is found to answer better than a collar, from its confining the shoulders less. The American carts far excel the English in all points, and in their lightest pattern the driver actually sits partly by the side of the horse.

PART II.

HORSE-RACING.

BOOK V.—THE PREPARATION OF THE RIDER.

TRAINING FOR RIDING is required only where, firstly, a very large-framed man is anxious to reduce his weight within such bounds as are compatible with the powers of a hunter to carry him up to hounds; and, secondly, when for racing purposes weight is to be reduced. In both cases it is only necessary that there should be no *loss* of power, and in both the plan may be nearly the same, though it is seldom that the amateur sportsman will go to the extreme pains and mortifications which the professional jockey is often obliged to submit to. It will be readily allowed that here the objects to be attained differ materially from those contemplated in training for rowing or pedestrianism, where the strength must be not only husbanded, but increased as much as possible, and in which purgation, sweating, and starving, must be used only so far as is consistent with the preservation of full health. In training for riding, on the contrary, if the ordinary strength is only husbanded, it need not be increased, though to ride a four-mile gallop or steeplechase with a pulling horse is no slight effort; still, however, a strong man may get off a great deal of weight by the above means, and yet be capable of holding his horse well together through a steeplechase, or twenty minutes' burst across country with foxhounds. But he must be a thorough sportsman at heart to do this, since the denials which he must submit to are by no means trivial.

I have more than once known the love of sport induce a man, who would in full health have ridden more than 16st., by the aid of a 10lb. saddle, go to the meet not more than 13st. 7lb. Such men have their reward, for they enjoy the full difference between seeing hounds do their work, without distressing their horses, or pounding along a roadway, or following in the rear of a field of lighter weights. It must be recollected, however, that for hunting the weight must be reduced during the whole of the winter, and consequently all unnatural purgatives and sweatings are out of the question, since they would injure the constitution if continued for so long a time. Hence I should advise that purgatives should not be resorted to more than once in ten days, or once a week at the most, since their effect, if frequently repeated is to weaken the stomach and bowels, and in all probability to shorten life.

Excessive sweatings are also likely to injure the constitution, and hence they also should be discarded by the ardent sportsman; but his best plan is to make up his mind to hunt three days a week, and shoot the other three, by way of a *moderate* sweat. This plan, however, is wholly useless, without a rigid guard is kept over the victualling department; and I know few tasks more arduous than this. The love of sport is great in the breast of most Englishmen, as well as their neighbours the Irish and Scotch; but in all three the love of a good dinner after a hard day's shooting is, as far as my experience goes, and as a rule, still stronger. But if this is indulged in there must be a farewell to the front rank in the field, for one good dinner will upset the good effects of a whole week's starvation; indeed, it is only by long habits of self-denial that the stomach is enabled to bear the degree of deprivation from food which is necessary for the purpose.

Now suppose a man usually walking 16st. wants to get off 2st., what must he sacrifice to do this? The following I believe to be about the amount of starvation necessary for a strong hearty man, *together with three days' hunting and three days' hard shooting.* This last clause is important in estimating the amount of abstemiousness required, because it is manifest that, with this amount of exercise a

man will lose weight upon a diet which, in a state of idleness, would be sufficient perhaps even to increase it First, it is absolutely necessary that the meals should be rigidly restricted to two daily—breakfast and dinner. Let no biscuit even tempt the poor unfortunate to indulge his craving at the covert-side, or at luncheon-time, after bringing to bag his 15 or 20 brace of birds. Such an indulgence would restore, and more than restore, the loss occasioned by the day's work; and the same may be said of wine or spirits-and-water at supper-time. In fact, as I said before, nothing but water must pass the lips except at breakfast and dinner; and the only remedy for the pangs of hunger is the Indian one, afforded by tightening the belt, if worn, or, if not, by tying a handkerchief tightly round the waist. For breakfast, in this case, the most bulky and least nutritive food should be selected; and for this purpose perhaps potatoes answer as well or better than any other article, if they agree well with the individual's stomach. About this point there is seldom much trouble, as a stomach treated in this way will generally digest everything presented to it. If potatoes are used, about six or eight ounces are quite the outside allowance, and they had better be eaten plain boiled, with a little salt. Next to potatoes, coarse bran bread is the best; or, if this is disliked, common household bread may be toasted and sopped in weak tea, which is the best liquid for this meal, or its place may be supplied with coffee; this, however, is not quite so good as tea for the purpose. The tea must be very weak, as strong tea has the power of retarding the waste of the system; and a small quantity of food with tea will go farther than a larger quantity taken with any other liquid except coffee, which resembles tea in this respect. Four ounces of bread are more than equal to eight ounces of potatoes, and yet do not satisfy the hunger *for the time* nearly so well. It is a question whether in six hours the stomach would not require a second meal more imperatively after the potatoes than after the bread; but there is a satisfaction in having a tolerable bellyful, even if the feeling is a transient one. No meat for this meal, or butter, or cream, or milk, should be indulged in; but plain potatoes or bread, with weak tea, sugarless and without milk, must be the wretched fare. I have known a basin of water-arrowroot used with advantage, very slightly sweetened with white sugar, and taken with a few thin slices of dry toast. There is, however, so little stay in this that walking exercise can scarcely be kept up upon it, but for the hunting morning it may do well enough. For dinner, from four to six ounces of meat of any kind must suffice; and for vegetables, nothing answers better than turnips and potatoes; not together, however, extending beyond the weight of six, or, at most, eight ounces, of which the turnips ought to comprise more than the half. If soup or fish is taken, it must be in the place of the above quantity of meat and not in addition to it. No beverage stronger than water should be taken at dinner, and only such a small quantity of wine afterwards as, from long habit, the constitution imperatively demands.

Such is the diet which, from my experience, I believe will be required to get off and keep down 2st. of good hard solid flesh. A much more lenient one will reduce a very fat man, who has got into his unwieldy state from overfeeding or idleness; but the case which I have been endeavouring to meet is the one of a strong healthy man in good work, and feeding heartily, who wants to reduce himself to this extent. If, therefore, such a man is sufficiently fond of foxhounds to go through such an ordeal as the above, I honour his love of sport, and wish him success; but let no man think that less disagreeable means will answer his purpose, and if he has recourse to purgatives and sweatings, they will soon take away all *animus* for sport as well as that bodily power which enables the mind to enjoy it.

Mr. Banting, of Kensington, a few years ago introduced a plan of reducing the weight, which succeeded in his case, and in that of many others, who followed his example. It mainly consists in avoiding fat, sugar, and starch, and in confining the diet to flesh and bread in small quantities. No doubt it answers the purpose; but my own belief is that there is little or no advantage in this plan, and the moment it is left off fat is put on much faster than before.

The Turkish Bath has been strongly recommended, and it also has the

desired effect when used three times a week, but it is strongly provocative of the appetite, and during its use the feelings of hunger are so keen as to be very trying. If these can be borne, there is no objection to it.

Training for Amateur Races.—For the professional jockey I scarcely think that any directions which I can give are at all wanted; he not only has the ordinary rules of the craft to which he belongs, but he soon finds by experience which best suits his own particular case. There are, however, many gentlemen-jocks who want, occasionally, to get off weight, and to these perhaps a few words may not be misapplied. It must be recollected that for this purpose, unlike the foxhunter, the weight is only wanted off by a particular day; and therefore all the means available for its reduction may be accumulated without any permanent injury to the constitution. It is a well known fact that a man is more weakened by a leech applied daily for sixteen days than by sixteen leeches applied on one day; and the same principle holds good, though in a still stronger degree, with regard to purgatives and sweatings. Two stone in ten days is the outside weight which is often wanted to be got off; and more than this will weaken the strength too much, though, of course, much must depend upon the state of the individual. It will be clear that it is easier to get two stone off a 16st. man than off a man of 7st. or 8st.; but, supposing we have to deal with one who wishes to ride 12st. (a common weight for amateur riders), and that he walks, ten days before the race, 13st. 7lb., here, with a seven-pound saddle, two stone must be reduced, which will give nearly three pounds a day for ten days. I should advise him to begin by ascertaining that his liver is acting properly; for if not, it is useless to attempt the task, as he will almost to a certainty catch cold if he resorts to mercurials during his preparation, and without them he will as surely upset his stomach and strength. But supposing the liver acting well, and the health good, let him put on his sweaters, including a flannel pair of drawers, two pair of trousers, a flannel jersey, a good thick worsted comforter, a warm cap, and a couple of coats; with these on, let him take a smart four or six mile walk. After returning, let him get under a feather bed and sweat for at least an hour; then get up and sponge himself with cold water, after which he may clothe himself quickly and rather more warmly than usual, and partake of his moderate breakfast, composed as indicated in page 549. After this meal he may amuse himself by any occupation not of a violent nature, or may take a gentle walk till dinner, about four or five o'clock, which also must not exceed the quantity already laid down. Next morning he may take a draught composed of four, six, or eight drachms of Epsom salts, with from five to twelve grains of jalap, and a tea-spoonful each of tincture and sweet essence of senna, dissolved in a little hot water. This will purge him well, and will get off nearly as much as the sweat; and by alternately using these two remedies, the three pounds per day will be steadily reduced. Of course he will go to scale daily, and will be guided by the weight lost, as to the amount of food to be taken, and as to the length of the sweats and the quantity of clothing to be put on, also as to the strength of the opening draught. If these directions are followed, the weight may and ought to be reduced on the day before the race about two pounds under the intended riding weight; for on the day itself it is not desirable, *if it can be avoided*, to sweat or purge, on account of the necessity for preserving the nerve and strength which are required in a race, especially the former. It will be found that, with all practical starvation, without sweating or purging, about two pounds will be gained between the last sweat and the time of the race, which period may be calculated on the average at thirty hours—and for this allowance must be made. The Turkish bath will get the weight off nearly as fast as the sweat above described, but it is more injurious to the constitution, and I should strongly advocate the sweat, unless the feet and legs are crippled in any way so as to forbid walking exercise

PART II.

HORSE-RACING.

BOOK VI.—THE PRINCIPLES AND PRACTICE OF BREEDING FOR RACING PURPOSES.

CHAPTER. I.

THEORY OF GENERATION, AND GENERAL PRINCIPLES OF BREEDING.

Sect. 1—Theory of Generation.

Before proceeding to enlarge upon the practical management of the breeding-stud, it will be well to ascertain what are the known laws of generation in the higher animals. I have already alluded to these, though very cursorily, in the chapter on the Breeding of the Greyhound; but as that of the horse is far more important in a national point of view, they are here given at greater length. They are as follows:—

1.—The union of the sexes is, in all the higher animals, necessary for reproduction; the male and female each taking their respective share.

2.—The office of the male is to secrete the *semen* in the *testes*, and emit it into the *uterus* of the female, where it comes in contact with the *ovum* of the female—which remains sterile without it.

3.—The female forms the *ovum* in the *ovary*, and at regular times, varying in different animals; this descends into the *uterus*, for the purpose of fructification, on receiving the stimulus and addition of the *sperm-cell* of the semen.

4.—The Semen consists of two portions—the *spermatozoa*, which have an automatic power of moving from place to place, by which quality it is believed that the semen is carried to the ovum; and the *sperm-cells*, which are intended to co-operate with the *germ-cell* of the ovum in forming the embryo.

5.—The Ovum consists of the *germ-cell*, intended to form part of the embryo—and of the *yolk*, which nourishes both, until the vessels of the mother take upon themselves the task, or, in oviparous animals, till hatching takes place, and external food is to be obtained. The ovum is carried down by the contractile power of the fallopian tubes from the ovary to the uterus, and hence it does not require automatic particles like the semen.

6.—The Embryo, or young animal, is the result of the contact of the *semen* with the *ovum*, immediately after which the *sperm-cell* of the former is absorbed into the *germ-cell* of the latter. Upon this a tendency to increase or "grow" is established, and supported at first by the nutriment contained in the yolk of the ovum, until the embryo has attached itself to the walls of the uterus, from which it afterwards absorbs its nourishment by the intervention of the *placenta*.

7.—As the Male and Female each furnish their quota to the formation of the embryo, it is reasonable to expect that each shall be represented in it—which is found to be the case in nature; but as the food of the embryo entirely depends upon the mother, it may be expected that the health of the offspring and its constitutional powers will be more in accordance with her state than with that of the father; yet since the sire furnishes one-half of the original germ, it is not surprising that in externals and general character there is retained a *fac-simile* to a certain extent of him.

8.—The Ovum of Mammalia differs from that of birds chiefly in the greater size of the yolk of the latter, because in them this body is intended to support the growth of the embryo from the time of the full formation of the egg until the period of hatching. On the other hand, in *mammalia* the placenta conveys nourishment from the internal surface of the uterus to the embryo during the whole time which elapses between the

entrance of the ovum into the uterus and its birth. This period embraces nearly the whole of the interval between conception and birth, and is called *uterogestation.*

9.—In all the Mammalia there is a Periodical "Heat," marked by certain discharges in the female, and sometimes by other remarkable symptoms in the male. In the former it is accompanied in all healthy subjects by the descent of an ovum or ova into the uterus; and in both there is a strong desire for sexual intercourse, which never takes place at other times in them.

10.—The Semen retains its fructifying power for some days, if it is contained within the walls of the uterus or vagina, but soon ceases to be fruitful if kept in any other vessel. Hence, although the latter part of the time of heat is the best for the union of the sexes, because then the ovum is ready for the contact with the semen, yet if the semen reaches the uterus first, it will still cause a fruitful impregnation, because it remains there uninjured until the descent of the ovum.

11.—The Influence of the Male upon the embryo is partly dependent upon the fact, that he furnishes a portion of its substance in the shape of the sperm-cell, but also in great measure upon the effect exerted upon the nervous system of the mother by him. Hence, the preponderance of one or other of the parents will in great measure depend upon the greater or less strength of nervous system in each. No general law is known by which this can be measured, nor is anything known of the laws which regulate the temperament, bodily or mental power, colour, or conformation of the resulting offspring.

12.—Acquired Qualities are transmitted, whether they belong to the sire or dam, and also both bodily and mental. As bad qualities are quite as easily transmitted as good ones, if not more so, it is necessary to take care that in selecting a male to improve the stock he is free from bad points as well as furnished with good ones. It is known by experience that the good or bad points of the progenitors of the sire or dam are almost as likely to appear again in the offspring as those of the immediate parents in whom they are dormant. Hence, in breeding, the rule is, that like produces like, *or the likeness of some ancestor.*

13.—The purer or less mixed the breed, the more likely is it to be transmitted unaltered to the offspring. Hence, whichever parent is of the purest blood will be generally more represented in the offspring; but as the male is usually more carefully selected, and of purer blood than the female, it generally follows that he exerts more influence than she does; the reverse being the case when she is of more unmixed blood than the sire.

14.—Breeding "In-and-In" is injurious to mankind, and has always been forbidden by the Divine law, as well as by most human lawgivers. On the other hand, it prevails extensively in a state of nature with all gregarious animals, among whom the strongest male retains his daughters and granddaughters until deprived of his harem by younger and stronger rivals. Hence, in those of our domestic animals which are naturally gregarious, it is reasonable to conclude that breeding "in-and-in" is not prejudicial, because it is in conformity with their natural instincts, if not carried farther by art than nature teaches by her example. Now, in nature we find about two consecutive crosses of the same blood is the usual extent to which it is carried, as the life of the animal is the limit; and it is a remarkable fact that in practice a conclusion has been arrived at which exactly coincides with these natural laws. "Once in and once out," is the rule for breeding given by Mr. Smith in his work on breeding for the turf; but twice in will be found to be more in accordance with the practice of our most successful breeders.

15.—The influence of the first impregnation seems to extend to the subsequent ones: this has been proved by several experiments, and is especially marked in the equine genus. In the series of examples preserved in the Museum of the College of Surgeons, the markings of the male quagga, when united with the ordinary mare, are continued clearly for three foals subsequent to that of which the quagga was the actual sire; and they are so clear as to leave the question settled without a doubt.

16.—When some of the elements of which an individual sire is composed are in accordance with others making up those of the dam, they coalesce in such a kindred way as to make what is called "a hit." On the other hand, when they are too incongruous, an animal is the result wholly unfitted for the task he is intended to perform.

SECT. 2.—IN-AND-IN BREEDING.

By a careful examination of the pedigrees of our most remarkable horses, of which I have inserted a series of tables at page 374 and following pages, it will be seen that in all cases there is some in-breeding; and in the greater part of the most successful a very considerable infusion of it. It is difficult to say what is not to be considered as such, or when to make it commence, for in all cases there is more or less relationship between the sire and dam of every thorough-bred horse—at least I cannot find a single exception; thus, for instance, examining the pedigree of Harkaway (Table 18), which is the result of one of the most direct crosses in the Stud-Book, we find that his sire and dam are both descended from Eclipse and Herod through three or four streams on each side, as will be seen on referring to the right-hand column. The same will apply to Alarm, who also is the result of as direct a cross as is often seen; and, in fact, whatever pedigree is analysed, the result will be that the bulk of it in the fifth or sixth remove is made up of Eclipse, Herod, and Matchem, or Regulus blood. It is not that a horse goes back to one of these stallions in one line only, but through six or seven, and sometimes through nearly all his progenitors. Hence, it may fairly be assumed that all the horses of the present day are related, either closely or distantly; but when we speak of in-and-in breeding we mean a nearer relationship than this, such as a first cousin, or at the most one in the second or third degree. But I believe it will be found that even this amount of relationship is desirable, if not carried too far, and that a vast number of our best modern horses have been bred in this way.

EXAMPLES OF SUCCESS FROM THIS PLAN.—The early racehorses of the 18th century were notoriously in-bred, of which Mr. Smith, in his book on breeding for the turf, gives us numerous convincing examples. The two Childers, Eclipse, Ranthos, Whiskey, Anvil, Boudrow, and, in fact, almost all the horses of that day, were much in-bred; sometimes to an incestuous degree, as in the cases of Bay Peg and the dam of Leedes, both in Herod's pedigree (Table 2), in which Spanker will be found to occur three times, and his dam twice in addition—in the one case as the dam and in the other as the grandam of incestuous offspring. One of these instances is repeated in the pedigree of Eclipse. In the above-mentioned treatise the breeder is advised to breed once in; and it appears to me that more valuable advice was never offered, except that I think it is only carried half as far as it ought to be. But, in consequence of the injurious effects of the system of in-breeding in the human family, a prejudice has been raised against it; and the result has been that in trying the opposite plan great mischief has often ensued. I have already shown that in nature in-breeding prevails very generally among gregarious animals like the horse and dog, and I will now endeavour to illustrate Mr. Smith's argument by modern examples. It may be remembered that he instances the Herod and Eclipse blood as having "hit" in a great number of horses, such as Whiskey, Waxy, Coriander, Precipitate, Calomel, Overton, Gohanna, and Beningbrough, which were out of Herod mares, by sons of Eclipse. But it must also be known that Eclipse and Herod are both descended from the Darley Arabian, the one on the sire's side, and the other on that of the dam; and that from this circumstance it is not surprising that a "hit" should follow, if in-breeding is advantageous. There are two points of view in which in-breeding should be viewed; first, as producing successful runners; and secondly, good stallions and brood mares; but though it seems to answer in both cases, yet it is in the latter point that I think it is chiefly to be recommended.

AMONG THE HORSES OF THE PRESENT CENTURY the following remarkable instances will illustrate this position; to

which great numbers of less illustrious names may be added :—

Example 1.—In 1827 Matilda won the St. Leger very cleverly, and proved herself a superior mare by beating a large field of good horses. She was out of Juliana, who was by Gohanna (son of Mercury and a Herod mare), out of Platina (by Mercury, out of another daughter of Herod). Matilda's dam, therefore, was the produce of BROTHER AND SISTER.

Example 2.—Cotherstone (winner of the Derby), and Mowerina (dam of West Australian), are the produce of FIRST COUSINS. (See Table 28.)

Example 3.—Touchstone and Verbena, sire and dam of Ithuriel, were SECOND COUSINS taking from Selim and his sister. (See Table 28*b*.)

Example 4.—Priam is an example of success by in-breeding, after a series of failures in crossing. Cressida, his dam, was put to Walton, Haphazard, Orville, Wildfire, Woful, Phantom Scud, Partisan, Little John, and Waterloo, without success. At last, being served by her cousin Emilius, a son of Orville (which horse had previously failed, not being related to her), she produced Priam. This horse and Plenipotentiary were both sons of Emilius, the latter being the result of as direct a cross as is often seen ; but the former was in-bred to Whiskey, who was sire of his dam, Cressida, and also great-grandsire of Emilius. Now the above-mentioned two horses were both extraordinary runners ; but whilst Plenipotentiary scarcely had an average success as a stallion, Priam, considering the short time he remained with us, achieved an imperishable fame. (See Tables 17 and 21.)

Example 5.—Bay Middleton was the produce of SECOND COUSINS, descended from Williamson's Ditto and Walton, own brothers, whilst Andover, his son, is the second time in with the Whalebone blood, as follows :—Web, the great-grandam of Bay Middleton, is sister to both Whalebone and Whisker, the grandsire and great-grandsire of sister to Ægis, dam of Andover. He, therefore, is also the son of cousins, uniting the blood of Selim, on his sire's side, with that of Rubens, brother to Selim, on that of his dam ; and thus he is not only in-bred, but the produce of an in-bred sire and dam. (Table 27.)

Example 6.—Stockwell and Rataplan are just as remarkable, being descended in the same degree from Whalebone, Whisker, and Web, the very same two brothers and sister as in Andover's case, with an infusion also of Selim blood, through Glencoe, sire of Pocahontas. (See Table 33.)

Example 7.—Orlando has a little stronger infusion of Selim blood, his dam being a granddaughter of that horse, and great-granddaughter of Castrel (brother to Selim), whilst Touchstone, his sire, is a great-grandson to the last-named horse. Here, then, in-breeding has been carried out to its fullest extent, Vulture having been the produce of FIRST COUSINS, and being put to a SECOND COUSIN derived through the same strain ; and the result, as is well known, was the most remarkable stallion of his day. (See Table 24).

Example 8.—An instance of the comparative value of two stallions, one more in-bred than the other, may be seen in Van Tromp and Flying Dutchman, both out of Barbelle. These two horses are both in-bred to Buzzard ; but Flying Dutchman is also descended from Selim, son of Buzzard on the side of both dam and sire, Selim being great-grandsire of Barbelle and grandsire of Bay Middleton. Now, it will not be questioned that Van Tromp has been comparatively a failure, while the Flying Dutchman, on the other hand, has been eminently successful as a stock-getter ; and such might have been expected, because his dam unites the stout blood of Catton and Orville with that of Selim, which last strain, taking with it the above valuable qualities, hits with the same Selim blood in Bay Middleton. (See Table 22.)

Example 9.—Weathergage was another instance of success in this mode of breeding, his sire and dam both taking from Muley and Tramp, and Miss Letty, his grandam, being by Priam, grandson of Orville, sire of Muley, out of a daughter of that horse—and consequently herself much in-bred. Weatherbit, the sire of Weathergage, also reunites the blood of the two sisters, Eleanor and Cressida.

Example 10.—I have already adduced some examples of the success of the union of the Whalebone with the Selim blood, and I may, in addition, remark on the case of Pyrrhus

the First; he was by Epirus, grandson of Selim, out of Fortress, great-granddaughter of Rubens, brother to Selim; and also in-bred to Whalebone, his dam being by Defence, the son, out of Jewess, the granddaughter, of that horse. (See Table 40.)

Example 11.—Safeguard was bred almost exactly in the same way, but a still closer degree of relationship existed between his sire and dam, he being by Defence (son of Defiance, by Rubens), out of a mare by Selim, brother to Rubens, which same mare was also descended from the Wellesley Grey Arabian. The strongest case of success from close in-breeding with which I am acquainted is in a son of the above horse, the steeplechaser Vainhope, who was by Safeguard, a grandson of Selim, and great-grandson of Rubens, out of a mare by Strephon, who was also by Rubens. Now his stoutness and soundness were too well known to need further comment; and his case alone is a strong argument in favour of the breeding-in a second time.

Example 12.—Almost as strong a case has since appeared in the Knight of St. George, who was by Birdcatcher, son of Sir Hercules, out of a granddaughter of that horse, and with a still further infusion of Waxy blood in her grandam. These last two examples are the strongest modern instances of close in-breeding with which I am acquainted; but as they were neither of them quite first-class, they do not so much strengthen the argument as some of the previously instanced horses. Nevertheless, being as close as they are, they show that the practice is not attended by a bad result in these particular cases.

Example 13.—The Saddler, who was remarkable for the stoutness, if not for the speed of his stock, was the produce of SECOND COUSINS, being descended on both sides of his pedigree from Waxy.

Example 14.—Chatham, as good a horse as ever ran, was by the Colonel, son of Whisker, out of Hester, by Camel, son of Whalebone, brother to Whisker; and he was therefore the produce of FIRST COUSINS. Both these horses (Examples 13 and 14) unite the Waxy and Buzzard blood.

Example 15.—Sweetmeat was valuable as a stallion, not only from being in-bred to Waxy, but because he also possessed so much of the celebrated Prunella blood, he being descended from that mare through three several lines—viz., through Parasol, Moses, and Waxy Pope.

Example 16.—Grace Darling (dam of the Hero, by Chesterfield) was the produce of SECOND COUSINS, both sire and dam being descended from Waxy. It is therefore not to be wondered at that she produced so stout a horse as the Hero, combining the Waxy, Priam, Octavian, and Rubens blood. His sire and dam were also third cousins through Cœlia as well.

Example 17.—Wild Dayrell's wonderful speed may be traced to a reunion of the blood of Velocipede, which exists on the side of both sire and dam, and also to his descent from Selim and Rubens, own brothers, who are respectively his paternal and maternal great-grandsires.

Example 18.—Cowl, by Bay Middleton out of Crucifix, was the result of the union of SECOND COUSINS, the sire being descended from Julia, and the dam from Cressida, both of them sisters to the celebrated mare Eleanor, the winner of the Derby and Oaks. There is also another cross of Whiskey blood from Emilius, so that Cowl is in-bred to Whiskey twice. It would have been a curious experiment to put him to some descendant of Muley—such as Alice Hawthorn or Virginia, thus uniting the *three* sisters in one, and making a third infusion of this blood with an intervening out-cross. It should be borne in mind that Young Giantess, the ancestress of all these mares, and also of Sorcerer, was the produce of second cousins, and each of these second cousins was also the produce of second cousins, both of their sires and dams having Godolphin as their great-grandsire.

Example 19.—Asteroid undoubtedly one of our best modern horses, has three lines of Whalebone and Whisker blood (own brothers); and the same remark applies to Marquis, each being by Stockwell out of a Touchstone mare.

Example 20.—St. Albans, another son of Stockwell, is out of Bribery, a granddaughter of Pasquinade, sister to Touchstone, so that the nick is in her case very nearly the same as in those of Asteroid and Marquis, and the in-breeding also—indeed, the general

success of Stockwell with Touchstone mares has been very remarkable, though of course not often to the extent of getting such horses as just named.

Example 21.—Argonaut's dam, Aphrodite, is the granddaughter of Sir Hercules, so that here a still closer case of in-breeding exists, the above horse being another Stockwell.

Example 22.—Tim Whiffler (Table 37) has four lines of Waxy, through Whisker, Whalebone, and Mrs. Barnet, and eight lines back to Trentham.

Example 23.—Blue Gown was the produce of second cousins, Touchstone being the grandsire of both Beadsman and Bas Bleu; and the infusion of Whalebone blood in this pedigree is noticeable, as besides being twice direct through Touchstone, it occurs also in his brother Whisker and sister Web, through Stockwell, and in another sister, Wire, the dam of Vat. (See Table 26.)

Example 24.—Macgregor, whose victory in the Two Thousand was as great as his defeat in the Derby was astounding, was an example of in-breeding for three successive generations. Manacle, by Emilius, was put to Touchstone, whose dam, Banter, was daughter of Master Henry, a nearly full brother in blood to Emilius—both horses being by Orville out of closely related mares. Bracelet, the result of this union, was mated with Fallow Buck, to whom also Emilius was grandsire. Necklace, the doubly in-bred produce, was in turn put to Macaroni, who, besides being a grandson of Banter, above mentioned, was further descended from Orville through Sweetmeat. These five lines to Orville, in three generations, do not, however, exhaust the in-breeding in Macgregor's pedigree; for Gladiator and Venison, the grandsires respectively of Macaroni and Necklace, were both sons of Partisan, not to mention the many other lines of relationship more remote.

Example 25.—One of the most in-bred pedigrees to be found in the Stud-Book is that of Zodiac (Table 86), and his sister, which will be met with recurring in the tables of West Australian (28), and Scottish Chief (46). Zodiac was not only the produce of second cousins, but of second cousins on the sides of both sires and dams, through Herod and Eclipse. Indeed, the infusion of blood other than that of the Godolphin and Darley Arabians is very small, so much so, that although there are only four generations intervening between Godolphin and Zodiac, the name of the former occurs ten times in the pedigree of the latter, and in one case the Arab is put to his own granddaughter.

The Following Brood Mares may be attentively examined, and their produce by near relations compared with that by horses only distantly connected, which I have shown all horses are in the present day. This is a still stronger proof of the advantage of in-breeding than the success of solitary horses as runners.

Example 1.—One of the most successful brood mares of late years was Decoy, who bred a long list of race-horses to Touchstone and Pantaloon. Now, the former of these horses was much more successful generally in getting racing-stock than the latter, and yet in this instance was beaten by him, as proved by comparing Drone, Sleight-of-hand, Van Amburgh, and Legerdemain, with Phryne, Thais, Falstaff, and Flatcatcher. Why was this the case? Simply because Touchstone was a more distant relation, and only one line in each was similar—namely, the great-grandsire, Waxy; but in the case of Pantaloon and Decoy there was a cousinship in the second degree, each having Peruvian as grandfather; and not only that, but Decoy herself was in-bred to Sir Peter, who was grandsire to both her dam and sire, so that Sleight-of hand and his brother and sister were *twice* in-bred to him. Well, as the Pantaloon and Decoy blood hit, and their produce were not only fast but stout, there was good reason for returning to Pantaloon after the out-cross with Touchstone which produced Phryne; this mare, when put to him, was successively the dam of Elthiron, Windhound, Miserrima, Hobbie Noble, the Reiver, and Rambling Katie; thus still further proving the value of in-breeding, more especially with an intervening out-cross, as in this case.

Example 2.—Cyprian, again, is an instance of the production of a lot of second-class horses, by crossing her with various sires not related in blood—as, for instance, Jereed, Velocipede, Voltaire, and Hetman Platoff; but when put to Birdcatcher, a great-great-

grandson of Prunella, and being herself a granddaughter of the same celebrated mare, she threw a superior animal, in the shape of Songstress.

Example 3.—Virginia (see Table 40) bred a series of middling horses, by Voltaire, Hetman Platoff, Emilius, and Birdcatcher, in all of which there was a single point in which she was related, but in all very distantly; neither was the strain, except that of Orville, first-rate; but when put to Pyrrhus I. she produced a Virago, who, as long as she remained sound, was very far the best of her year. On examining and comparing the pedigrees of the sire and dam, it will be seen that Selim and Rubens (brothers) occur on each side once, and Whalebone, whose name is seen twice in the table of Pyrrhus I., is represented in that of Virginia by Woful, his brother, besides which Young Giantess occurs in each table. These are over and above the Hambletonian relationship, which is the same in this case as in that of the result of the cross with Voltaire and Hetman Platoff.

Example 4.—In the year 1855, after a series of failures, Alice Hawthorn produced on the turf a racehorse in the shape of Oulston. Now, if the pedigrees of his sire and dam are examined, it will be seen that Melbourne, the sire, is a grandson of Cervantes, while Alice Hawthorn is also a great-granddaughter of the same horse—Cervantes being a grandson of Eclipse and Herod, from which latter horse he also receives two other infusions, and Alice being descended from Eclipse, through Orville, Dick Andrews, Mandane, and Tramp. A very similar case of in-breeding with the same strains occurred in Sir Tatton Sykes, who was the produce of a mare, great-granddaughter of Comus, and also great-great-granddaughter of Cervantes. She was put to Melbourne, a grandson of both these horses, producing that extraordinary horse which I am now adducing as an instance of success in this mode of breeding. The pedigree of the dam of Sir Tatton Sykes should be carefully analysed, as exhibiting a curious reunion of strains. First, Muley is in-bred to Whiskey, he is then crossed with an Election mare, producing Margrave; the dam of Muley being Eleanor, a daughter of Young Giantess. Next, Margrave, an out-cross, is put to Patty Primrose, containing in her pedigree two infusions of Young Giantess through Sorcerer, and one of Cervantes; and finally, the Margrave mare, the result of one in-breeding and one out-cross on the side of both her sire and dam, is put to Melbourne, composed of the blood of all three—being descended from Sorcerer, a son of Young Giantess, and also from Cervantes.

If the whole of the pedigrees to which I have here alluded are attentively examined, the breeder can have no hesitation in coming to the conclusion that in-breeding, carried out once, or even twice, is not only not a a bad practice, but is likely to be attended with good results. Let him ask what horses have been the most remarkable of late years as stallions, and with very few exceptions he will find they were considerably in-bred. It has been remarked that the Touchstone and Defence blood almost always hits with the Selim; but it is forgotten that the one was already crossed with that horse, and the other with his brother Rubens. On the other hand, the Whisker blood in the Colonel has not succeeded so well, it being made up of much crossed and more distantly related particles, and therefore not hitting with the Selim and Castrel blood like his cousins, Touchstone and Defence. It has, however, partially succeeded when in-bred to the Waxy and Buzzard blood, as in Chatham and Fugleman, who both reunite these three strains. The same applies to Coronation, who unites the Whalebone blood in Sir Hercules, with that of Rubens, in Ruby; but as Waxy and Buzzard, the respective ancestors of all these horses, were both grandsons of Herod, and great-grandsons of Snap, it only strengthens the argument in favour of in-breeding. This conclusion is in accordance with the 14th and 15th axioms which embody the state of our present knowledge of the theory of generation; and if they are examined, they will be seen to bear upon the present subject, so as to lead one to advise the carrying out of the practice of in-and-in breeding to the same extent as has been found so successful in the instances which I have given. Purity of blood is intimately connected with the practice, because the nearer it is to one standard the more unmixed it is, and

by consequence the more fully it is represented in the produce. Hence, it is doubly needful to take care that this pure blood is of a good kind; because if bad it will perpetuate its bad qualities just as closely as it would the good, or perhaps still more so.

Sect. 3.—Out-Crossing.

By Crossing the Blood we understand the selection of a sire composed of wholly different blood from that of the dam, or as different as can be obtained of the quality that is suitable to the particular purpose in view. Thus, in breeding racehorses it is found that continuing in the same strain beyond two stages deteriorates the constitutional health, diminishes the bone, and lowers the height; hence it is important to avoid this evil, and another strain must be selected which shall lead to the same results as were previously in existence, without the deterioration alluded to. This is called out-crossing, or, more commonly, crossing. The great difficulty is to obtain this object without destroying that harmony of proportions and due subordination of one part to another which is necessary for the racehorse, and without which he seldom attains high speed. Almost every individual breed has peculiar characteristics, and so long as the sire and dam are both in possession of them they will continue to reappear in the produce; but if a dam possessing them is put to a horse of a different character, the result is often that the produce is not a medium between the two, but is in its anterior parts like the dam, and in its posterior resembling its sire, or *vice versâ*—than which no more unfortunate result can occur. Thus, we will suppose that a very strong muscular horse is put to a very light racing mare; instead of the produce being moderately stout all over, he will often be very stout and strong behind, and very light and weak before, and as a consequence his hind-quarter will tire his fore-limbs, by giving them more to do than they have the power of accomplishing. This is well seen in Crucifix, who was a very wiry and fast, but light mare, with a fore-quarter hardly capable of doing the work of her own hind-quarter. Now, she was several times put to Touchstone (a horse remarkable for getting bad-shouldered stock, but with strong muscular propellers), and with the solitary exception of Surplice, these were a series of failures. Surplice was also defective in the same way; still he managed to get along in an awkward style, but, somehow or other, at a great pace. Cowl, on the other hand, was a better galloper, because there was a greater harmony of parts; but he was somewhat deficient in the stout qualities which Touchstone was intended to supply; yet he has proved himself to be as good a stallion as Surplice, because he was more truly made, and by consequence more likely to perpetuate his own likeness.

Examples of Out-Crossing.—Harkaway has been alluded to before as a strong case of out-crossing, his sire and dam not being closely related, though still going back to Herod or Eclipse in almost all his lines. He would, however, be considered a decided case of crossing, and he was no doubt a very superior racehorse. Nevertheless, he has not done much as a sire, his stock generally being deficient in that essential quality, speed, though stout enough to make good hunters and steeplechasers. Perhaps his best son was Idleboy, in which the Waxy blood in the sire hit with the same strain in Iole, the dam, who was a daughter of Sir Hercules. (See Table 109.)

Example 2.—One of the most remarkable cases of success in crossing when carried out to a great extent is seen in Beeswing, and her sons Newminster, Nunnykirk, and Old Port. In the mare herself the lines are all distinct, and in her cross with Touchstone they are so likewise for three removes. At that distance there is a great-grandsire of Touchstone, Alexander, who is brother to Xantippe, great-great-grandmother of Beeswing, so that she and Touchstone were third cousins. Whether or not this consanguinity, slight as it was, sufficed to produce this happy result in Newminster and Nunnykirk must be left an open question; but there can be no doubt that Touchstone succeeded with her, whilst a failure resulted from Sir Hercules, who was still more distantly related, the nearest connexion with him being a fourth cousinship through Volunteer and Mercury, own brothers. Queen of Trumps has often

been adduced as a case of successful out-crossing, but though her great-grandsires and great-grandams were certainly none of them identical, yet beyond that line there is an extraordinary influx of Herod blood through Highflyer, Woodpecker, Lavender, Florizel, and Calash, all his sons or daughters. Now, no one can maintain that it is not very remarkable when we find such a dash of blood from one superior horse in such an extraordinary animal as Queen of Trumps; neither can it be said that she is composed of materials not related to each other; but at the same time she is fairly to be considered under the ordinary acceptation of the term as a mare bred from a distinct cross. Hers is, however, a very instructive example, as showing that success is sometimes achieved by reuniting, after an interval of several generations, a series of good strains; whether or not her goodness is dependent upon this reunion, or whether it results from the crossing, is only to be decided by comparing a number of cases together, and considering on which side lies the balance of evidence.

Example 3.—West Australian is an exceedingly valuable example of the benefit of a *good* out-cross after in-breeding, and between his sire and dam there was less relationship even than usual; still the truth of the remark made in page 553, as to the horses of the present day being all either closely or distantly related, here receives striking confirmation, as by tracing West Australian's pedigree to its earliest sources it will be found that he runs back to the Godolphin Arabian in no less than 112 lines, which are equally divided in number between Melbourne, his sire, and Mowerina, his dam.

Example 4.—Teddington, on the contrary, so often adduced for a similar purpose, presents one line of relationship which interferes with the assumption. I have adduced his sire, Orlando, as an instance of successful in-breeding twice through Selim and Castrel, and certainly that strain is not perpetuated in Teddington's dam; but a little more distantly there occurs in each portion of the table the name of Prunella and her sister, Peppermint, though only so far as to make them fifth cousins. Still it cannot be compared to the case of West Australian, where the cross is much more decided. In both, however, the sire or dam was much in-bred, and this must be taken into the account in all cases.

Example 5.—One of the most thoroughly-crossed pedigrees of late years is that of Kingston, and being such a good horse as he was, his case must be allowed to weigh in favour of this kind of breeding; but, as I before observed, it is not so much in reference to running as to breeding that this plan is to be considered. Where an out-cross was wanted for such blood as that of Touchstone, which had already been used twice in a pedigree, I can conceive nothing better than this game horse, who, according to this theory, might be expected to produce the good effect required by a cross, without interfering with the form of the Touchstone mare. On the other hand, where a second in-breeding to Venison or Partisan mares was required by those who are fond of that peculiar blood, he was well calculated to carry out that view, because the other lines are all good.

Example 6.—Voltigeur, again, is another instance of success from a decided cross.

Example 7.—Cossack would, likewise, generally be considered a cross, though even in his case the relationship was that of a fourth cousin; but there is no doubt that numerous cases of successful runners may be adduced where there was no relationship between sire and dam nearer than a fifth or sixth cousinship.

Example 8.—The celebrated Blink Bonny was a strong instance of a success in crossing. Still as her dam has two lines of Whalebone (if Moses was really by that horse, which he most probably was not, his dam having been considered as stinted to Seymour by many people), she would not be so considered. But, granting the Seymour parentage, she is compounded of lines from Comus, Cervantes, Golumpus, Walton, Emilius, and Whalebone, all very distinct from each other. Her son, Blair Athol, is by Stockwell, containing two lines of Whalebone blood, and here we see the advantage of returning to the same strain after an out-cross.

Example 9.—Lord Clifden, as will be seen on referring to the pedigree (Table

116), has no in-breeding whatever, except very distantly to Golumpus.

Example 10.—Scottish Chief (Table 46), is another instance of successful out-crossing.

Example 11.—Macaroni (Table 57) has no consanguinity in his ancestry for five generations.

Example 12.—Caractacus, like his sire, Kingston, is a strong example of a cross-bred horse.

Example 13.—Saunterer (Table 29) has only the two lines of Whalebone and Whisker in the pedigree of his sire, Irish Birdcatcher.

Example 14.—Gemma Di Vergy (Table 35) is a strong case of success in out-crossing.

Sect. 4.—Comparison of In-Bred and Crossed Stallions.

The following List of forty of the most immediately successful stallions of late years shows the proportion of in-bred to crossed horses of this class to be equal. I have omitted such as only became celebrated through their daughters as brood-mares, for instance, Defence, &c. :—

In-Bred Stallions.

1. Priam	11. Sweetmeat
2. Bay Middleton	12. Chatham
3. Melbourne	13. Flying Dutchman
4. Cotherstone	14. Sir Tatton Sykes
5. Pyrrhus I.	15. Chanticleer
6. The Baron	16. Stockwell
7. Orlando	17. Rataplan
8. Ithuriel	18. Flying Dutchman
9. Cowl	19. Lord of the Isles
10. The Saddler	20. Weatherbit

Crossed Stallions.

1. Partisan	11. Alarm
2. Emilius	12. Ion
3. Touchstone	13. Harkaway
4. Birdcatcher	14. Velocipede
5. Sir Hercules	15. Hetman Platoff
6. Voltaire	16. Newminister
7. Plenipotentiary	17. Kingston
8. Pantaloon	18. Voltigeur
9. Lanercost	19. King Tom
10. Venison	20. Oxford

CHAPTER II.

THE BEST MODE OF BREEDING THE HORSE FOR ALL RACING PURPOSES.

Sect. 1.—Choice of Blood to Breed from.

The uncertainty of the results from the best-concerted plans in breeding for the turf is proverbial among those who are engaged in the undertaking. Nevertheless, it is clear that laws must exist which regulate this as well as every other operation of nature ; and, though it may at present be difficult to lay them down with certainty, yet an attempt should be made in order that a foundation may be laid for a future superstructure of sound materials. There are some difficulties which stare us in the face, but which, nevertheless, are much more easily explained than at first sight would appear. Thus, for instance, it is said that when a mare breeds a good colt, and is again put to the same horse, the second is often as worthless as the first is superior ; and that, consequently, two and two in breeding do not always make four. Now, there can be no doubt that this is true ; but it is necessary to remember that health is an element which makes or mars every horse ; and that if the second is not possessed of the same degree of high animal vigour, the result of high health, it is not wonderful when he falls short in performances which are the tests of his goodness. But, taking the other side of the question, it is extraordinary that in some cases there have been a series of successes arising from the union of the same two parents—as in the Whalebone and Whisker example, where there were six most extraordinary horses and mares resulting from the union of Waxy with Penelope ; and on the other hand, as remarkable a series of failures when she was put to even such good horses as Walton, Rubens, and Election. Castrel, Selim, and Rubens again are out of the same mare, and all by Buzzard, yet she was put to Calomel, Quiz, Sorcerer, and Election without a single successful result. Again, there are cases where a horse begets racing stock out of all sorts of mares,

and thus we find in more recent days Touchstone, a grandson of Whalebone, carrying on his grandfather's fame still further, if possible, and begetting a most extraordinary series of winners: but, be it remembered, with an infusion also of one of the three above-mentioned brothers, Selim, who was his maternal great-grandfather. Barbelle, dam of Van Tromp and Flying Dutchman, is another similar case; as is also Fortress, the dam of Old England, and Pyrrhus I. Another remarkable example may be traced in the three sisters by Whiskey, out of Young Giantess —viz., Cressida, Eleanor, and Julia, which produced Priam, Muley, and Phantom by three different sires.

The list of similar examples might be extended to a great length, though not always perhaps occupied with such illustrious names as the above; but still sufficiently so to indicate that winning blood runs in families, and, by consequence, that it is not all the result of chance. Sometimes this is the case with the brood mare, as in the above instances, and sometimes with the stallion, as in the case of those who become the celebrities of their day. Moreover, it has been found that certain unions or crosses almost always succeed, while others as invariably fail; and as there must be a reason for this, it is desirable to investigate the matter and endeavour to ascertain the facts connected with these successes and failures. For instance, it has been found that the union of the Touchstone blood with that of Selim or Pantaloon has uniformly succeeded (or "hit," as it is termed); and the example is so remarkable, that it leads one to investigate the pedigrees of all three, when it turns out that the first-named is composed of one-eighth Selim already; and that in putting him to a descendant of that horse or his brother Castrel, the sire of Pantaloon, it is only reuniting the previously separated particles derived from them. This is *a fact* which will serve to form the basis of an argument, and if supported by similar facts, it would show that in-and-in breeding to some extent is not prejudicial, but, on the other hand, that it is in all probability absolutely advantageous. At the same time it cannot be disputed that the Waxy and Buzzard blood has almost always hit in its first union, as shown in page 557, and elsewhere; and having succeeded once, it always seems to hit again still more successfully; and the only question is how far the in-breeding might be carried without deterioration. Again, reverting to the descendants of Whiskey, who was a grandson of Eclipse, we find them hitting once with the Orville blood in producing Emilius and Muley; and again, a second time, with Priam as a result, he being also out of a daughter of Whiskey. Liverpool, sire of Lanercost, was also a grandson of Whiskey on his dam's side, his sire, Tramp, taking a direct descent from Eclipse in the same number of removes as Whiskey.

But it is only by further investigation, and ascertaining how far these facts occur in a similar way throughout a series of cases, that any conclusion can be formed; and such a series has been given under the section devoted to an examination of the propriety of in-breeding. By universal consent, however, it is now admitted, and common sense would always lead one to believe, that where a series of winners have appeared of any particular strain, it is likely that others will follow; and hence it has been the rule to select horses of families which have been successful on the turf, in the particular line which it is wished still further to succeed in. Thus, if a fleet racer is intended to be bred, the breeder would select blood which has produced winners of the Derby, Oaks, or St. Leger, or, if possible, all three. If a steeplechaser is the object of ambition, then the breeder would, as a matter of course, look for the sires and dams of such animals as Lottery, Gaylad, Brunette, the Colonel, &c., and choose from them, or their immediate relations, mares and stallions for his purpose. Again, in breeding hunters, it would follow that such stallions would be selected as have produced good stock of that particular class in which stoutness, cleverness, good temper, and sound constitution are indispensable requisites, when united also with the power of carrying weight. Trotters, again, must be chosen for getting trotters; and no one would expect to rear a horse capable of doing his fourteen miles per hour at this pace, from a sire and dam which could not trot above eight, and that with a straight knee. I have myself owned a mare by Monarch out of Gadabout, which was as fine a trotter as ever was seen, going fast and in the most perfect trotting

style, and I have seen some few others, almost as good, of full blood; but they are exceptions to the rule; and there is no case that I know of in which one of our thorough-bred horses could compete with the regular match-trotter, though blood is here required, as in all cases where staying is imperative.

In all cases, therefore, the breeder must make up his mind as to what description of horse he wants to breed, and then select his mares and sires from such animals as belong to families which have long been famous for the qualities he is in search of. If, in addition, he can actually procure the individuals which have distinguished themselves, it will be so much the better; but we shall hereafter find that family is of more consequence than individual success.

Sect. 2.—The most Profitable Kind of Breeding.

In many cases the breeder undertakes his task for the purpose of gratifying his tastes for rural sports and amusements, and without regard to profit; but in most instances there will be a desire to make the speculation successful in a pecuniary point of view, as well as with regard to honorary distinction on the turf. But when it is remembered that three-fourths of those bred expressly for racing are worthless for that purpose, and that each colt or filly costs considerably more than 100*l.* at three years old, it becomes a question how best to conduct operations so as to make use of the casts-off from the racing-stable for other purposes.

The question is solved in this way. There are certain breeds of horses which are first-rate on the turf, and also in the hunting-field; as for instance all the descendants of Waxy and his family, except Touchstone—namely, Sir Hercules, Defence, the Colonel, the Saddler, Economist, Harkaway, Safeguard, Memnon; these have all been extraordinary in this respect; and if I were selecting mares for general purposes, it would be my object to obtain those got by one or other of them. Lottery and his son, Sheet Anchor, have also been remarkable in this way, and would be valuable for the purpose; but as the family has not been so extensively useful, they are not to be relied on in the same degree. The Comus, Reveller, and Humphrey Clinker strains have likewise been much in vogue for this double purpose, many first-rate hunters being descended from these horses and also good racing-stock, as recently seen in Melbourne. Partisan, and his son Venison, deriving their descent from Highflyer and Parasol, the grandam of Whalebone, are, in the same category of horses, useful in both vocations; while Ishmael and Ratcatcher, again, may be adduced as descendants of Selim which have been useful in the hunting-field, but they have not equalled the previously mentioned horses in their hunting-stock. On the other hand, there are many strains of good racing-blood which have never, or scarcely ever, turned out a hunter or a steeplechaser—Touchstone, already mentioned, and his brother Launcelot, Priam, Plenipotentiary, Velocipede, Pantaloon, Bay Middleton, Beiram, Phantom, &c.; and though such blood may suit the breeder for one purpose, it is not calculated to serve the man who wishes two strings to his bow.

From the above remarks it may be gathered, that, in my humble opinion, a breeding-stud may be formed which shall produce a few colts and fillies capable of racing, while those which are not racehorses may be expected to serve as hunters of a high class. By this plan a greater number of prizes will be drawn in the lottery, and the scheme will pay far better than on the exclusive principle. So long as thorough-bred hunters are the fashion, and command such high prices, it will be found that it is a much more paying speculation to sell off the drafts at hunters' prices than for the wretched sums which they fetch as racing-stock. There are so many accidents and risks in all stud-farms, that a great number will always be useless or dead, and the blanks will in proportion be numerous; consequently it is highly necessary to make the most of the materials which are available for paying the expense of the establishment. If, then, instead of selling off the rejected three-year-olds, such as are of good size are turned out and allowed to grow and thicken till they are five, they might then be re-broken and made into hunters, or sold for that purpose, without incurring any trouble or risk; and they would fetch from 150*l.* to 200*l.* apiece, or in some cases considerably more.

SECT. 3.—SELECTION OF BROOD MARE.

IN CHOOSING THE BROOD MARE four things must be considered—first, her blood; secondly, her frame; thirdly, her state of health; and fourthly, her temper.

HER BLOOD or breeding will mainly depend upon the views of the breeder—that is to say, what particular class of colts he wishes to obtain, and according to his decision he will look out for mares of the particular kind he desires to reproduce, on the principle that "like begets like," but subject to the various considerations partly alluded to in the last chapter, and partly in this and subsequent ones.

IN FRAME, the mare should be so formed as to be capable of carrying and well nourishing her offspring; that is, she should be what is called "roomy." There is a formation of the hips which is particularly unfit for breeding purposes, and yet which is sometimes carefully selected, because it is considered elegant; this is the level and straight hip, in which the tail is set on very high, and the end of the haunch-bone is nearly on a level with the projection of the hip-bone. The opposite form is represented in the skeleton given with the article "Horse," which is that of a thoroughbred mare, well formed for this breeding purpose, but in other respects rather too slight. By examining her pelvis, it will be seen that the haunch-bone forms a considerable angle with the sacrum, and that, as a consequence, there is plenty of room, not only for carrying the foal, but for allowing it to pass into the world. Both of these points are important, the former evidently so, and the latter no less so on consideration, because if the foal is injured in the birth, either of necessity or from ignorance or carelessness, it will often fail to recover its powers, and will remain permanently injured. The pelvis, then, should be wide and deep—that is to say, it should be large and roomy; and there should also be a little more than the average length from the hip to the shoulder, so as to give plenty of bed for the foal; as well as a good depth of back-ribs, which is necessary in order to support this increased length. This gives the whole framework of the trunk of a larger proportion than is always desirable in the racehorse, which may easily be overtopped; and hence many good runners have failed as brood mares, whilst a great number of bad runners have been dams of good racehorses. Beyond this roomy frame, necessary as the eggshell of the foal, the mare only requires such a shape and make as is well adapted for the particular purpose she is intended for; or, if not possessing it herself, she should belong to a family having it, according to the 13th axiom given in the last chapter. If a mare can be obtained possessing all these requisites in her own person, so much the more likely will she be to produce racehorses; but if not all, then it is better that she should add as many as possible to the needful framework, without which her office can hardly be well carried out. But with this suitable frame, if she belongs to a family which, as a rule, possesses all the attributes of a racehorse, she may be relied on with some degree of certainty, even though she herself should fail in some of them.

There are many fine roomy mares which have been useless as racehorses from being deficient in the power of some one quarter, either behind or before, or perhaps a little too slack in the loin for their length. Such animals, if of good running families, should not be despised; and many such have stood their owners in good stead. On the other hand, some good-looking animals have never thrown good stock, because they were only exceptional cases, and their families were of bad running blood on all or most sides. No mare could look much more unlike producing *strong* stock than Pocahontas, but being of a family that numbers Selim, Bacchante, Tramp, Web, Orville, Eleanor, and Marmion among its eight members in the third remove, it can scarcely occasion surprise that she should respond to the call of the Baron by producing a Stockwell and a Rataplan.

IN HEALTH, the brood mare should be as near perfection as the artificial state of this animal will allow; at all events, it is the most important point of all, and in every case the mare should be very carefully examined, with a view to discover what deviations from a natural state have been entailed upon her by her own labours, and what she has inherited from her ancestors. Independently of the consequences of accidents, all deviations from a state of

health in the mare may be considered as more or less transmitted to her, because in a thoroughly sound constitution, no ordinary treatment such as training consists of will produce disease, and it is only hereditary predisposition which, under this process, entails its appearance. Still there are positive, comparative, and superlative degrees of objectionable diseases incidental to the brood mare, which should be accepted or refused accordingly. All accidental defects, such as broken knees, dislocated hips, or even "breaks down," may be passed over; the latter, however, only when the stock from which the mare is descended are famous for standing their work without this frailty of sinew and ligament. Spavins, ring-bones, large splents, side bones, and, in fact, all bony enlargements, are constitutional defects, and will be almost sure to be perpetuated, more or less, according to the degree in which they exist in the particular case. Curby hocks are also hereditary, and should be avoided; though many a one much bent at the junction of the *os calcis* with the *astragalus* is not at all liable to curbs. It is the defective condition of the ligaments there, not the angular junction, which leads to curbs; and the breeder should carefully investigate the individual case before accepting or rejecting a mare with suspicious hocks. Bad feet, whether from contraction or from too flat and thin a sole, should also be avoided; but when they have obviously arisen from bad shoeing, the defect may be passed over. Such are the chief varieties of unsoundness in the legs which require circumspection; the good points which, on the other hand, are to be looked for are those considered desirable in all horses that are subjected to the shocks of the gallop. Calf knees are generally bad in the racehorse, and are very apt to be transmitted, whilst the opposite form is also perpetuated, but is not nearly so disadvantageous.

Such are the general considerations bearing upon soundness of limb. That of the wind is no less important. Broken-winded mares seldom breed, and they are therefore out of the question if for no other reason; but no one would risk the recurrence of this disease even if he could get such a mare stinted. Roaring is a much vexed question, which is by no means theoretically settled among our chief veterinary authorities, nor practically by our breeders. Every year, however, it becomes more and more frequent and important, and the risk of reproduction is too great for any person wilfully to run by breeding from a roarer. As far as I can learn, it appears to be much more hereditary on the side of the mare than on that of the horse; and not even the offer of a Virago should tempt me to use her as a brood mare. There are so many different conditions which produce what is called "roaring," that it is difficult to form any opinion which shall apply to all cases. In some instances, where it has arisen from neglected strangles, or from a simple inflammation of the larynx, the result of cold, it will probably never reappear; but when the genuine idiopathic roaring has made its appearance, apparently depending upon a disease of the nerves of the larynx, it is ten to one that the produce will suffer in the same way. Blindness, again, may, or may not be hereditary; but in all cases it should be viewed with suspicion as great as that due to roaring. Simple cataract without inflammation undoubtedly runs in families; and when a horse or mare has both eyes suffering from this disease, without any other derangement of the eye, I should eschew it carefully. When blindness is the result of violent inflammation brought on by bad management, or by influenza, or any other similar cause, the eye itself is more or less disorganized; and though this itself is objectionable, as showing a weakness of the organ, it is not so bad as the regular cataract.

Such are the chief defects or deviations from health in the mare; to which may be added a general delicacy of constitution, which can only be guessed from the amount of flesh she carries while she is suckling or on poor keep, or from her appearance on examination by an experienced hand, using his eyes as well. The full firm muscle, the bright and lively eye, the healthy-looking coat at all seasons, rough though it may be in the winter, proclaim the hardiness of constitution which is wanted, but which often coexists with infirm legs and feet. Indeed, sometimes the very best-topped animals have the worst legs and feet, chiefly owing to the extra weight they and their ancestors also have had to carry. Crib-biting is sometimes a habit acquired from idleness, as also is wind-sucking; but if

not caused by indigestion, it often leads to it, and is very commonly caught by the offspring. It is true that it may be prevented by a strap; but it is not a desirable accomplishment in the mare, though of less importance than those to which I have already alluded, if not accompanied by absolute loss of health, as indicated by emaciation, or the state of the skin.

Lastly, the Temper is of the utmost importance, by which must be understood not that gentleness at grass which may lead the breeder's family to pet the mare, but such a temper as will serve for the purposes of her rider, and will answer to the stimulus of the voice, whip, or spur. A craven or a rogue is not to be thought of as the "mother of a family;" and if a mare belongs to a breed which is remarkable for refusing to answer the call of the rider, she should be consigned to any task rather than the stud-farm. Neither should a mare be used for this purpose which had been too irritable to train, unless she happened to be an exceptional case; but if of an irritable family she would be worse even than a roarer, or a blind one. These are defects which are apparent in the colt or filly, but the irritability which interferes with training often leads to the expenditure of large sums on the faith of private trials, which are lost from the failure in public, owing to this defect of nervous system.

Sect. 4.—Choice of Stallion.

Like the Brood Mare, the stallion requires several essentials—commencing also like her, first, with his blood; secondly, his individual shape; thirdly, his health; and fourthly, his temper. But there is this difficulty in selecting the stallion, that he must not only be suitable *per se*, but he must also be adapted to the particular mare which he is to "serve." Thus, it will be manifest that the task is more difficult than the fixing upon a brood mare, because (leaving out of consideration all other points but blood) in the one case a mare only has to be chosen which is of good blood for racing purposes, while in the other there must be the same attention paid to this particular, and also to the stallion's suitability to the mare, or to "hit" with her blood. Hence, all the various theories connected with generation must be investigated, in order to do justice to the subject; and the breeder must make up his mind whether in-and-in-breeding, as a rule, is desirable, or otherwise; and if so, whether it is adapted to the particular case he is considering. Most men make up their minds one way or the other on this subject, and act accordingly, in which decision much depends upon the prevailing fashion. The rock upon which most men split is a bigoted favouritism for some particular horse: thus, one man puts all his mares to Orlando; another to Surplice or the Flying Dutchman; although they may every one be of different blood and form to the others. Now, this cannot possibly be right if there is any principle whatever in breeding; and however good a horse may be, he cannot be suited to all mares. Some, again, will say that any horse will do, and that all is a lottery; but I think I shall be able to show that there is some science required to enable the breeder to draw many prizes. That the system generally followed of late is a bad one I am satisfied, and with the usual and constant crossing and re-crossing it is almost a lottery; but upon proper principles, and with careful management, I am tempted to believe that there would be fewer blanks than at present. I have already given my own theoretical views upon the case, illustrated by numerous examples on both sides of the question. It will now be my object to apply these views practically by selecting special instances.

In Choosing the Particular Blood which will suit any given mare, my impression always would be, that it is desirable to fix upon the best strain in her pedigree, if not already twice bred in-and-in, and then to put to her the best stallion available of that blood. In some cases, of course, it will happen that the second best strain will answer better, because there happens to be a better horse of that blood to be had than of the superior strain, which would otherwise be preferred. If, on the other hand, the mare has already been in-bred to the extent of two degrees, then a cross will be advisable; but I am much inclined to believe, from the success of certain well-known cases, that even then a cross into blood already existing in the mare, but not recently in-bred nor used more than once, will sometimes answer. Upon these

principles I should, therefore, look for success; and if the series of tables I have herewith given are carefully studied, it will be seen that the production of good winners has so often followed this practice as to make its adoption exceedingly tempting. It is surprising to me that this very common occurrence of in-breeding among our best modern horses has so generally escaped observation, and the only way in which I can explain it is by supposing, that its having frequently been through the grandam on either side it has been lost sight of, because the knowledge of the sire's and grandsire's blood is generally the extent to which the inquiry goes. Thus, we find a writer on the subject, who assumes the name of "Craven," asserting, at page 121 of "The Horse"—"There is no proximity of relationship in the genealogy of the Flying Dutchman, Touchstone, Melbourne, Epirus, Alarm, Bay Middleton, Hero, Orlando, Irish Birdcatcher, Cossack, Harkaway, Tearaway, Lothario, or others of celebrity." Now of these the Flying Dutchman is the produce of second cousins; Bay Middleton, his sire, being also in-bred to Williamson's Ditto and Walton, own brothers; and Orlando, containing in his pedigree Selim twice over, and Castrel, his brother, in addition. Melbourne also is the produce of third cousins, both his sire and dam being descended from Highflyer. But if to these four, which he has specially named, be added the numerous "others of celebrity," to which I have drawn attention, besides a host of lesser stars too numerous to mention, it will be admitted that he takes for granted the exact opposite of the fact.

The Choice of Particular Stallions, as dependent upon their Formation, is not less difficult than that of the mare, and it must be guided by nearly the same principles, except that there is no occasion for any framework especially calculated for nourishing and containing the fœtus, as in her case. As far as possible, the horse should be the counterpart of what is desired in the produce, though sometimes it may be necessary to select an animal of a breed slightly exaggerating the peculiarity which is sought for, especially when that is not connected with the preponderance of fore or hind-quarters. Thus, if the mare is very leggy, a more than usual short-legged horse may be selected; or if her neck is too short or too long, an animal with this organ particularly long or the reverse, as the case may be, should be sought out. But in all cases it is dangerous to attempt to make too sudden an alteration with regard to size, as the effort will generally end in a colt made without due proportion of parts, and therefore more or less awkward and unwieldy.

In Constitution and general health, the same remarks exactly apply to the horse as the mare. All hereditary diseases are to be avoided as far as possible, though few horses are to be met with entirely free from all kinds of unsoundness, some the effects of severe training, and others resulting from actual disease, occurring from other causes. With regard to fatness, there is an extraordinary desire for horses absolutely loaded with fat, just as there formerly was for overfed oxen at Christmas. It is quite true that the presence of a moderate quantity of fat is a sign of a good constitution, but, like all other good qualities, it may be carried to excess, so as to produce disease; and just as there often is hypertrophy, or excess of nourishment of the heart, or any bony parts, so is there often a like superabundance of fat causing obstruction to the due performance of the animal functions and often ending in premature death. This is in great measure owing to want of exercise, but also to over-stimulating food; and the breeder who wishes his horse to last, and also to get good stock, should take especial care that he has enough of the one and not too much of the other.

In Temper also, there is no more to be added to what I have said relating to the mare, except that there are more bad-tempered stallions met with than mares, independently of their running, and this is caused by the constant state of unnatural excitement in which they are kept. This kind of vice is, however, not of so much importance, as it does not affect the running of the stock, and solely interferes with their stable management.

Sect. 5.—Best Age to Breed from.

It is commonly supposed that one or other of the parents should be of mature age, and that if both are very young

or very old, the produce will be decrepit or weakly. A great many of our best horses have been out of old mares, or by old horses—as, for instance, Priam, out of Cressida, at twenty; Crucifix, out of Octaviana, at twenty-two; and Lottery and Brutandorf, out of Mandane, at twenty and twenty-one; Voltaire got Voltigeur at twenty-one; Bay Middleton was the sire of Andover at eighteen, and Touchstone got Newminster at seventeen. On the other hand, many young stallions and mares have succeeded well, and in numberless instances the first foal of a mare has been the best she ever produced. In the olden times, Mark Antony and Conductor were the first foals of their dams; and more recently, Shuttle, Pope, Filho da Puta, Sultan, Pericles, Oiseau, Doctor Syntax, Manfred, and Pantaloon have all been first-born. Still these are exceptions, and the great bulk of superior horses are produced later in the series. The youngest dam which I ever heard of was Monstrosity, foaled in 1838, who produced Ugly Buck at three years old, having been put to Venison when only two years of age. Her dam also was only one year older when she was foaled; and Venison himself was quite a young stallion, being only seven years old when he got Ugly Buck; so that altogether the last-mentioned horse was a remarkable instance of successful breeding from young parents. As in most cases of the kind, however, his early promises were not carried out, and he showed far better as a two-year-old, and early in the following year, than in his maturity. Such is often the case, and, I believe, is a very general rule in breeding all animals, whether horses, dogs, or cattle. The general practice in breeding is to use young stallions with old mares, and to put young mares to old stallions; and such appears to be the best plan, judging from theory as well as practice.

Sect. 6.—Best Time for Breeding.

For all racing purposes an early foal is important, because the age takes date from the 1st January. The mare, therefore, should be put to the horse in February, so as to foal as soon after 1st January as possible. As, however, many mares foal a little before the end of the eleventh month, it is not safe to send her to the horse before the middle of the second month in the year. For further particulars, see the chapter in which the general management of the mare and foal is fully detailed.

Sect. 7.—Peculiarities of the various Modern Breeds.

The various crosses since the days of Herod, Eclipse, and Matchem are so numerous, that it is no longer possible to class them under the heads of these three horses; and far less under those of their reputed ancestors—the Godolphin and Darley Arabians and the Byerly Turk. There are, however, in the present day, certain strains which have distinguished themselves on the turf as remarkable for certain qualities; such as the Waxys, the Orvilles, and the Buzzards, in the very first class, and the Blacklocks, the Tramps, the Waltons, the Haphazards, and the Sorcerers in the second. Besides these, there have been other strains celebrated in their day, but which have not come down to the present time without loss of reputation. As sires only the above horses are here considered.

Waxy stands at the head of the list, not only as an extraordinary racehorse himself, but as having got immediately and remotely more winners of great races than any two horses since his time. Indeed, when a horse numbers thirteen winners of the Derby among his stock in the direct male line within fifty years, besides eleven Oaks winners and thirteen St. Leger victories, it is incontrovertible evidence of the superiority of his blood. Like Orville, he is chiefly composed of Eclipse and Herod blood, with a double-dash of the Godolphin, through Sportsmistress and Lisette. His stock are all remarkable, like the Orvilles, for great gameness and true running; but they have not generally so much bone and substance as that horse's descendants. Whalebone and Wire, two of the extraordinary family by him out of Penelope, are well and characteristically named, and give the idea exactly of the peculiarities of most of the blood. They stand any amount of training as far as their constitutions go, and are rarely overmarked; but most of them require care in reference to their legs, which are scarcely capable of standing the work which the wiry nature of

their bodies demands, in order to bring them out fine enough for displaying their extraordinary staying qualities. They will run all day, and no distance is too great for them; indeed, it is in this point that they are so particularly to be depended upon; not being so fast for a mile as many others, but when two miles are to be compassed they shine to great advantage, and still more at longer distances. Hence, they have succeeded frequently over the St. Leger Course after failing in the Derby—as in the cases of the Colonel, Touchstone, Newminster, &c.; and still more frequently in the distances run in the Derby, Oaks, and St. Leger than in the Two Thousand Guineas course. As steeple-chasers also their peculiar powers have been displayed, and the success of Sir Hercules in this way is very remarkable. Discount, a son of his, was a Waxy all over, having the full muscular body, with a constitution of iron; but unfortunately accompanied with legs that would scarcely ever stand a preparation, even when conducted with all the care of an experienced trainer. Besides the Waxy lines, which are seen in the female branches of so many of our best pedigrees, there are, in the male line, Whalebone and Whisker, out of Penelope, and Waxy Pope out of Prunella, her dam; the first two are re-united in the Baron, Cotherstone, and West Australian, while the last has done good service in Ireland; and still further, Stockwell, Rataplan, and Andover unite to the first two the blood of their sister Web. Whalebone was also sire of Camel, Waverley, Defence, and Sir Hercules; and these, again, are represented as follows: Camel by Touchstone and Orlando—*cum multis aliis;* Waverley by the Saddler and Don John; Defence by Safeguard, the Emperor, Hero, Andover, and Pyrrhus I. (most however in the female line); Sir Hercules, by Birdcatcher and his brother Faugh-a-Ballagh; besides Robert de Gorham, and Newcourt, and, through Birdcatcher, Chanticleer; Whisker is perpetuated by the Colonel and his son, Chatham, as well as by several in the female line; also by Economist and his son Harkaway.

Orville, like Waxy, a good racehorse as well as a sire of racehorses, is remarkable for combining speed with stoutness in a greater degree than most of our celebrated horses. Like almost all of our best stallions, he was in-bred to King Herod, his dam having been by Highflyer, son of Herod, and his sire out of a Herod mare; whilst his grandsire, King Fergus, was out of a mare by Tartar, sire of Herod. Hence, according to the law to which I have alluded at great length, it is to be expected that his blood, being in-bred to such a horse as Herod, will prevail; and especially when the remaining strains are derived from Eclipse, Crab, and Matchem. As the ancestor of the following horses, he will always be famous; and his blood even in the present day is eagerly sought for. When put to Emily, who was also full of Herod and Eclipse blood, he got Emilius, a horse quite as celebrated as his sire. By Eleanor, the celebrated winner of the Derby and Oaks, he had Muley, who is represented by Drayton, Eleanor being bred very much like Emily, and both possessing the blood of Whiskey; and again, by Miss Sophia, another descendant of Herod and Eclipse, he got Master Henry, a very celebrated runner and sire in his day, but since chiefly represented by Touchstone. By Bizarre, sister to Finesse, and also full of Herod and Eclipse blood (see Table 38), he had Bizarre, who, however, has not much added to his sire's fame; and finally, out of Marianne, by Mufti, he got Octavius, a winner of the Derby, but not otherwise celebrated. Emilius was a magnificent horse, with bone and substance calculated to carry 14st. He was the sire of Priam, Plenipotentiary, Recovery, Pompey, Euclid, California, Theon, Plenary, Oxygen, and Duvernay, besides many others; but the above have most of them done good service in the stud, some of them being extraordinary runners as well as getters of stock—as, for instance, Priam, Plenipotentiary, Pompey, and Recovery. The success of Priam is remarkable, considering the small number of mares put to him in this country; but, in any case, to be the progenitor of Crucifix, and her sons Surplice and Cowl, of Miss Letty, Industry, Weathergage, Cossack, and the Hero, is no common reputation. All these horses here mentioned have been distinguished by true running, and the blood always trains on, which is a very important advantage; the descendants of Emilius, being full of

Eclipse blood through the male line, and also through Miss Hervey, Waxy, Vixen, and Saltram, are particularly stout and honest.

Buzzard differs from Waxy and Orville in the general characteristics of his stock, which are more calculated for the Rowley Mile than for the longer distances of the Epsom and Doncaster courses. Still, considering their enormous speed, they are wonderfully stout; but no horse can possibly live the pace of which some of the family are capable, without showing signs of distress. Hence, many of this strain have obtained a character for want of staying qualities without fully deserving it; but still there is no doubt that over a distance of ground they would generally be beaten by the stock of Whalebone or Orville. Most of this blood have finely-sloping shoulders, with rather light carcases, good propelling powers generally, but marked by rather weak lower thighs and somewhat straight hocks. This last characteristic is very peculiar to them, for though the point of the hock is well developed, yet it seems, as it were, drawn into the *tendo Achillis*, and almost continuous with it, yet at the same time without any appearance of curbs. Whether or not their great speed is in any way dependent upon this formation I know not, but it seems almost invariably to attend upon this blood. Few of them are strictly well-formed throughout, and almost all are capable of being picked to pieces; and yet they manage, when set going on the course, to enlist the admiration of all by their magnificent style of going. They *flow on* to victory apparently without effort, and while the Whalebones or Emiliuses often require the stimulus of the whip or spur, the descendants of Buzzard will generally achieve their victories without any persuasion but their own high spirit, and the natural ease and elegance of their action. They generally train very easily, being of a pretty good constitution, and requiring no more sweats than their legs will stand; not that their understandings are particularly good, but that their frames are seldom loaded, and that they readily part with their superfluous flesh. Buzzard is represented by almost as many fashionable horses of recent days as Waxy. In the first generation he got Castrel, Selim, and Rubens, own brothers, and their sister, the great-granddam of Ithuriel, out of an Alexander mare. Also Bustard, grandsire of Lanercost. Castrel, again, was sire of Pantaloon and Merlin, and grandsire of the Queen of Trumps. Selim got Sultan and Langar; and through the former is the ancestor of Bay Middleton, Ishmael, Beiram, Glencoe, and Jereed; through Bay Middleton also he is great-grandsire of the Flying Dutchman and Andover, and great-great-grandsire of Wild Dayrell. Langar, again, is sire of Ratcatcher and Epirus, and through the latter is grandsire of Pyrrhus I. Lastly, Rubens is represented conjointly with Whalebone, by a host of Defence mares and their produce; and Defence partaking of the blood of both horses, a share may fairly be claimed by the son of Buzzard.

The Blacklocks are generally known by their plain, vulgar appearance, their calf-knees, flat foreheads, and general plebeian look, often accompanied by legginess. Some, however, have been fast enough with good staying qualities; one of his sons, Mr. Osbaldeston's Tranby, was an extremely stout horse, and his performances under 11st., in the celebrated match against time, will always redound to the credit of his sire. The brilliant performances also of Velocipede and his stock are to be set to his credid, and those of Voltaire and his sons, Voltigeur, Tearaway, and Charles XII. But nearly all of his blood are deficient in temper, and are consequently difficult to train and to bring out as often as they are wanted.

Tramp is somewhat like Blacklock in the prevailing character of his descendants, but they are generally better formed about the legs, and some of them have been good racehorses, though not quite first-class. Zinganee, Lottery, and Liverpool could all stay a distance, but they were scarcely fast enough to win great stakes; the same may be said of Lanercost and Sheet Anchor and their stock.

The Waltons and the Haphazards may well be classed together. In blood they were nearly identical, being by Sir Peter, out of mares by Eclipse, or his son, Dungannon. Put to two different mares descended from Waxy, they produced—the former, Partisan, and the latter, Filho da Puta; while out of Julia, daughter of Whiskey, Walton

got Phantom, another celebrity of his day. Of these, Partisan is the most prized; and the blood of his sons, Venison and Gladiator, is by many considered equal to anything out, as well as that of their descendants, Vatican, Alarm, Kingston, and Sweetmeat. Nothing can exceed the beauty of form resulting from these combinations of the Waxy and Sir Peter blood; and it seems to be perpetuated in all the descendants, which are remarkable for blood-like frames with Arabian-looking heads, fine muzzles, full eyes, light necks, and good shoulders, and also for wiry and lasting legs and feet. This latter peculiarity is perhaps owing to their light girth, and consequent want of weight for their legs to carry; but nevertheless they are almost all stout enough, and especially the Venisons. As the sires of good, useful country platers, no horses have ever come up to this strain; but there has generally been a want of high speed, which has kept them in the rear of very good company. They will race all day, and the next day too; and when heats were in vogue they were invaluable to the votaries of that barbarous practice. I suspect the mares of this breed will yet rival the daughters of Defence in breeding good, sound, and, perhaps, even flying stock, put to suitable horses.

LASTLY COME THE SORCERERS.—Large, fast and loose, they require room to display their peculiar powers, which are calculated to shine over a flat, or any straight course, rather than a small and confined one. Few of this blood are neat, and some are peculiarly coarse and gaunt, like the Melbournes, but yet so well proportioned and truly made as to catch the eye of the connoisseur. With large heads, roomy frames, big legs and joints, united to great useful hocks and powerful propellers, they are fit for any work but turning corners, where they are undoubtedly out of their element. Such are the Soothsayers, Comuses, Revellers, Humphrey Clinkers, Melbournes, together also with the last horse's celebrated sons, Sir Tatton Sykes, West Australian, Oulston, and Young Melbourne. All are fast enough for anything, but require time to fill up their fine frames, and should have been reserved till five years of age, if justice were to have been done them. On the whole, this blood may be considered as inferior to none but the three first-described strains, in which it is surpassed in persistence of good qualities for a series of years, though, taking any single horse against him, Melbourne will perhaps make good fight for superiority.

SECT. 8.—LIST OF MODERN STALLIONS.

THE FOLLOWING LIST embraces the stallions of the present day (1878) as advertised in the *Racing Calendar* and *Bell's Life*:—

ALBERT VICTOR, 10 yrs, ch h, by Marsyas, out of The Princess of Wales, by Stockwell; at Croft Stud Farm, Darlington; 25gs.

ALCIBIADE, 18 yrs, ch h, by The Cossack out of Aunt Phillis, by Epirus; at Upton House, Banbury; 10gs.; h-b, 5gs.

ANDRED, 8 yrs, ch h, by Blair Athol out of Woodcraft, by Voltigeur; at Heath House, Newmarket; 10gs.

ARGYLE, 12 yrs, ch h, by Adventurer out of Itch, by Irish Birdcatcher; at Woodlands, Knitsley Station, Co. Durham; 5gs.

ARROW, 8 yrs, br h, by D'Estournel out of Archeress, by Longbow; at Knockhill, Ecclefechan, N.B.; 5gs.; h-b, 2½gs.

ASTEROID, 20 yrs, b h, by Stockwell out of Teetotum, by Touchstone; at Newbridge Hill Stud Farm, Bath; 20gs.

ATHERSTONE, 20 yrs, b h, by Touchstone out of Lady Harriet, by Merry Monarch; at Manton, Marlborough.

BARON, THE, 11 yrs, b h, by King Tom out of Bay Celia, by Orlando; at Wassand Stud Farm, Hull; 5gs.

BAY OF NAPLES, THE, 6 yrs, b h, by Macaroni out of Fairwater, by Loup-garou; at Fairwater Stud Farm, Cardiff; 10gs.; h-b, 3gs.

BERSERKER, 12 yrs, b h, by Buccaneer out of Anxiety, by Knight of Kars; at Hawton, near Newark; 5gs.

BRUCE (American trotter), by Lumber, by Ericsson; at Little South Street Farm, Westerham, Kent.

BUCKENHAM, 19 yrs, b h, by Voltigeur out of an Ithuriel mare; at Minton House, Wem, Salop.

BUSTARD, 9 yrs, ch h, by Macaroni out of Songstress, by Chanticleer; at Astwood, Claines, Worcestershire; 5 gs.; h-b, 2½gs.

CAMBALLO, 6 yrs, b c, by Cambuscan out of Little Lady, by Orlando; at Croft Stud Farm, Darlington; 15gs.

CARDINAL YORK, 12 yrs, b h, by Newminster out of License, by Gameboy; at Finstall Park, Bromsgrove; 40gs.

CARNELION, 6 yrs, b h, by Lecturer out of Tourmalin, by King Tom; at Mentmore, Leighton Buzzard; 15gs.

CATHEDRAL, 17 yrs, ch h, by Newminster out of Stolen Moments, by Melbourne; at Waresley, near Hartlebury; 30gs.

CECROPS, 15 yrs, b h, by Newcourt out of Cavriana, by Longbow; at Old Oak Farm, Shepherd's Bush; 25gs

CHIVALROUS, 8 yrs, ch h, by Adventurer out of Auld Acquaintance, by Irish Birdcatcher; at Red Hill Farm, Edgeware; 5gs.

CLANSMAN, 16 yrs, br h, by Roebuck out of Makeaway, by Harkaway; at Old Oak Farm, Shepherd's Bush; 5gs.; h-b, 3gs.

COCK OF THE WALK, 13 yrs, bk h, by Chanticleer

out of Whimsical, by Launcelot; at Highfield Hall, St. Albans; 10gs.

COLDNESS, 5 yrs, b h, by King Tom out of Crocus, by Thormanby; at Barrow's Paddocks, Newmarket; 10gs.

COSTA, 19 yrs, b h, by The Baron out of Catherine Hayes, by Lanercost; at Old Oak Farm, Shepherd's Bush; 10gs.

CRAIG MILIAR, 6 yrs, ch h, by Blair Athol out of Miss Roland, by Fitz Roland; at Manton House, Marlborough; 30gs.

CRAMOISI, 10 yrs, ch h, by Vermont out of Mdlle. de Cravache; at Neasdon Stud Farm, Middlesex; 10gs.; h-b, 5gs.

DEERSWOOD, 18 yrs, b h, by Orlando out of The Arrow, by Slane; at Nailcote Hall, near Coventry; 15gs.; h-b, 3gs.

DELAY, 9 yrs, b h, by Loiterer out of Orlanda, by Orlando; at Willesden Paddocks, Kilburn; £10; h-b, £5.

DEXTER (American trotter), by Dexter; at Redhill, Edgeware.

DISTIN, 14 yrs, b h, by Trumpeter out of Miss Bowzer, by Hesperus; at Woodfield Stud Farm, Ombersley, Droitwich; 20gs.

DUTCH SKATER, 12 yrs, br h, by the Flying Dutchman out of Fulvie, by Gladiator; at Middle Park, Eltham; 50gs.

DR TEMPLE, 10 yrs, b h, by Newminster out of Merry Wing, by Irish Birdcatcher; at Over's Paddocks, Rugby; 5gs.

ESCA, 15 yrs, br h, by Voltigeur out of Vanity, by Touchstone; at Petworth; 5gs.

EXMINSTER, 9 yrs, b h, by Newminster out of Stockings, by Stockwell; at Little Sutton, near Chester; 20gs.

EARL, THE, 13 yrs, br h, by Y. Melbourne out of Bay Cilia, by Orlando; at Newbridge Hill Stud Farm, Bath; 10gs.

FLASH IN THE PAN, 22 yrs, b h, by Pontifex out of Gratis, by Pompey; at Naunton, Kempsey; 5gs.

FALKLAND, 11 yrs, b h, by Voltigeur out of Lady Di, by Faugh a Ballagh; at Auchencruive, Ayr; 10gs.; h-b, 3gs.

GENERAL PEEL, 17 yrs, b h, by Y. Melbourne, dam by Orlando; at Glasgow Stud Farm, Enfield; 30gs.

GLENLYON, 12 yrs, b h, by Stockwell out of Glengowrie, by Touchstone; at High Lodge, Richmond, Yorkshire; 15gs

GLOWWORM, 8 yrs, b h, by Young Melbourne out of Twilight, by Mountain Deer; at Old Palace Yard, Bicester; 5gs.; h-b, 2½gs.

GROUSE, 20 yrs, b h, by King Tom out of Blooming Heather, by Melbourne; at Low Street Stud Farm, Bedale; 10gs.; h-b, 3gs.

GOLD MOHUR, 6 years, b h, by Cambuscan out of Rupee, by the Nabob; at Willesden Paddocks, near London.

HAWKSHAW, 17 yrs, br h, by Gemma di Vergy out of Nourmahal, by Lanercost; at Manor Farm, Bradenham, Norfolk; 2½gs.

HENRY, 11 yrs, b h, by Monarque out of Miss Ion, by Ion; at Middle Park, Eltham; 40gs.

HERMIT, 14 yrs, ch h, by Newminster out of Seclusion, by Tadmor; at Blankney; 150gs

HIGHLANDER, 10 yrs, br h, by Blair Athol out of Bistre, by West Australian; at Middle Park, Eltham; 15gs.

JOHN DAVIS, 17 yrs, br h, by Voltigeur out of Jamaica, by Liverpool; at Water Tower Farm, Rugby; 20gs

JOLLY FRIAR, 5 years, b h, by Beadsman out of Frivolity, by Macaroni; at the Henburys, Moseley, near Birmingham; gratis.

JOSKIN, 22 yrs, br h, by West Australian out of Peasant Girl, by The Major; at Newbridge Hill Stud Farm, Bath; 25gs.

JOVE, 12 yrs, b h, by Thunderbolt out of Melody, by Bay Middleton; at Neasdon Stud Farm, Willesden; 5gs.; h-b, 3gs.

KING ALFRED, b h, 13 yrs, by King Tom, dam by Bay Middleton; at Newbridge Hall Stud Farm, Bath, 15gs.

KINGCRAFT, 11 yrs, br h, by King Tom out of Woodcraft, by Voltigeur; at Park Paddocks, Newmarket; 25gs.

KNIGHT TEMPLAR, 16 yrs, b h, by The Knight of Kars out of Whist, by Melbourne; at Great Barfield, Braintree; 5gs.; h-b, 3gs.

KNIGHT OF ST. PATRICK, 20 yrs, b h, by Knight of St. George out of Pocahontas, by Glencoe; at Highfield Hall, St. Albans; 20gs.

LECTURER, 15 yrs, b h, by Colsterdale out of Algebra, by Mathematician; at Wentworth House, Rotheram; 30gs

LINGERER, 11 yrs, br h, by Loiterer out of Recluse, by The Hermit; at Neasdon Stud Farm, Willesden; 10gs.; h-b, 5gs.

LOWLANDER, 8 yrs, ch h, by Dalesman out of Lufra, by Windhound; at Wassand Stud Farm, Hull; 25gs

MACGREGOR, 11 yrs, b h, by Macaroni out of Necklace, by Fallow Buck; at Woodlands, Knitsley Station, Co. Durham; 20gs.

MAINSTONE, 21 yrs, b h, by King Tom out of Blister, by Bay Middleton; at Bethus; 5gs.; h-b, 2gs.

MARS, 13 yrs, b h, by Marsyas out of Necklace, by Fallow Buck; at Faggotters, Harlow, Essex; 10gs.

MASTER RICHARD, 17 yrs, ch h, by Teddington out of Energy, by Weatherbit; at Newbridge Hill Stud Farm, Bath; 15gs.

MINER, THE, 17 yrs, ch h, by Rataplan out of Manganese, by Birdcatcher; at Low Street Stud Farm, Bedale (since dead); 25 gs.

MONTAGNARD, 14 yrs, by Fitz Gladiator out of Milwood, by Sir Hercules; at Alwalton, Peterboro'; 10gs.

MOGADOR, 18 yrs, b h, by King Tom out of Moonshine, by Orlando; at Water Tower Farm, Rugby; 10gs.; h-b, 5gs.

MOORLANDS, 11 years, ch h, by Lord Clifden out of Audrey, by Stockwell; at Elstow, Bedford; 7gs.; h-b, 3gs.

NIGHT STAR, 9 yrs, b h, by Loiterer out of Media Noce, by Weatherbit; at Willesden Paddocks, Kilburn; £10; h-b, £5.

NOVAR, 6 yrs, ch h, by Scottish Chief out of Cachuca, by Fandango; at Downhill's Farm, West Green, Tottenham; 5gs.; h-b, 3gs.

NOT OUT, 11 yrs, ch h, by Umpire out of Surge, by Envoy; at Holman's Paddocks, Cheltenham; 5gs.; h-b, 2gs.

NUNEHAM, 9 yrs, br h, by Oxford out of Auricula, by Ambrose; at Coton, Hanbury, Burton-on-Trent; 25gs.

OBAN, 5 yrs, bk h, by Blinkhoolie out of Needle-Gun, by Gunboat; at Devises; gratis; h-b, 3gs.

ORNE, 14 yrs, b h, by Feruck Kahn out of Princess de la Paix, by Gladiator; at Stafford; gratis.

OUTPOST, 11 yrs, b h, by Vedette out of Antidote, by Kingston; at Rawcliffe Stud Buildings, York; 10gs.

PAUL JONES, 13 yrs, br h, by Buccaneer out of Queen of the Gipsies, by Chanticleer; at Finstall Park, Bromsgrove; 20gs.

PEDOMETER, 6 yrs, br h, by King Tom out of Miss Peddie, by Poynton; at Harlestone Paddocks, Northamptonshire; 5gs.; h-b, 3gs.

PELLEGRINO, 4 yrs, br h, by The Palmer out of Lady Audley, by Macaroni; at Finstall, Bromsgrove; 25gs.

PERO GOMEZ, 12 yrs. br h, by Beadsman out of Salamanca, by Student; at Bonehill Paddocks, Tamworth; 50gs.

PLEBEIAN, 6 yrs, by Joskin out of Queen Elizabeth, by Autocrat; at Barrow's Paddock, Newmarket; 10gs.

PRETENDER, 11 yrs, b h, by Adventurer out of Ferina, by Venison; at Sheffield Lane Paddocks; 15gs.

PRINCE OF PERU, 6 yrs, b h, by Inca out of Charming Woman, by Longbow; at Newton Vale, Newton Heath.

PRINCE VON BISMARCK (American trotter), by

Canadian out of Sally; at Anderson's Livery Stables, Glasgow.

PROSPER, 10 yrs, br h, by Tim Whiffler out of Prosperity, by Ethelbert; at Croom Court, Worcestershire; 5gs.: h-b, 3gs,

QUEEN'S MESSENGER, 9 yrs, b h, by Trumpeter out of Queen Bertha, by Kingston; at Heath House, Newmarket; 10gs.

RAKE, THE, 14 yrs, by Wild Dayrell out of England's Beauty, by Birdcatcher; at Easton Lodge, Dunmow; 20gs.

REVERBERATION, 7 yrs, ch h, by Thunderbolt out of Golden Horn, by Harkaway; at Rufford Abbey, Ollerton, Notts; 10gs.

RICHMOND, 9 yrs, br h, by St. Albans out of Amanda, by Annandale; at Lambton Park, Fence Houses; 10gs.; h-b, 3gs.

RUPERT, 12 yrs, ro h, by Knowsley, dam by Rapid Rhone; at Highfield Hall, St. Albans; 10gs.; h-b, 5gs.

SATURNALIA, 12 yrs, br h, by Carnival out of Rosina, by The Emperor; at Royal Oak Paddocks, Leatherhead; 5gs; h-b, 3gs.

SAUNTERER, 24 yrs, bk h, by Birdcatcher out of Ennui, by Bay Middleton; at Middle Park, Eltham; 30gs.

SCOTTISH CHIEF, 17 yrs, b h, by Lord of the Isles out of Miss Ann, by The Little Known; at Middle Park; 150gs.

SIDEROLITE, 12 yrs, b h, by Asteroid out of Aphrodite, by Bay Middleton; at Knighton, Radnorshire; 10gs.; h-b, 5gs.

SILVESTER, 9 yrs, ch h, by St Albans out of Silverhair, by Kingston; at Castle Farm, Tickhill; 10gs; h-b, 5gs.

SOMERSET, 8 yrs, b h, by The Duke out of Cherwell, by Oxford; at Meriden Stud Farm, Coventry; 10gs; h-b, 3gs.

SOUCAR, 11 yrs, b h, by Dollar out of Agra, by Birdcatcher; at Tewkesbury; 5gs.; h-b, 2½gs.

STRAFFORD, BROTHER TO, 18 yrs, br h, by Y. Melbourne, dam by Gameboy; at Glasgow Stud Farm, Enfield; 25gs.

STRAFFORD, 17 yrs, br h, by Y. Melbourne, dam by Gameboy; at Montgomery; 5gs.

STRATHCONAN, 15 yrs, gr h, by Newminster out of Souvenir, by Chanticleer; at Castle Farm, Tickhill; 30gs.

STRUAN, 9 yrs, b h, by Blair Athol out of Terrific, by Touchstone; at Nailcote Hall, near Coventry; 25gs; h-b, 3gs.

SUMMERTIME, 14 yrs, br h, by Stockwell out of Summerside, by West Australian; at Water Tower Farm, Rugby; 6gs.; h-b, 3gs.

SWEETSTOCK, 11 yrs, b h, by Stockwell out of Miss Teasdale, by Sweetmeat; at Cynynion, Oswestry; 10gs.; h-b, 5gs.

TANGIBLE, 8 yrs, ch h, by Blair Athol out of Touch Me Not, by Touchstone; at Hook House, Howden; 10gs.

THUNDERER, 10 yrs, ch h, by Thunderbolt out of Homily, by Surplice; at Over's Stables, Rugby; 5gs

TOXOPHOLITE, 23 yrs, b h, by Longbow out of Legerdermain, by Pantaloon; at Glasgow Stud Farm, Enfield; 30gs

TURNTABLE, 9 yrs, b h, by North Lincoln out of Reaction, by King Tom; at Worsley Hall Stud Farm; 10gs.

TYNEDALE, 14 yrs, b h, by Warlock out of Queen of the Tyne, by Tomboy; at Sheffield Lane Paddocks; 10gs.

TYPHŒUS, 13 yrs, b h, by Stockwell out of Typee, by Touchstone; at Dringhouses, York; 15gs.; h-b, 5gs.

VANDERDECKEN, 9 yrs, br h, by Saccharometer out of Stolen Moments, by Melbourne; at Landwades, Newmarket; 25gs.

VEDETTE, 24 yrs, br h, by Voltigeur, dam by Birdcatcher; at Old Oak Farm, Shepherd's Bush; 25gs.

VENTNOR, 11 yrs, br h, by Buccaneer out of Maid of Derwent, by Flatcatcher; at Wentworth House, Rotherham; 5gs.; h-b, 2½gs.

VESPASIAN, 15 yrs, b h, by Newminster out of Vesta, by Stockwell; at Middle Park, Eltham; 30gs.

VICTORIOUS, 16 yrs, b h, by Newminster, dam by Jeremy Diddler; at Middle Park, Eltham; 40gs.

WARREN POINT, 7 yrs, b h, by Cambuscan out of Amorous, by Ambrose; at St. Paulswalden, Bury Whitewell, Herts; 7gs.; h-b, 3gs.

WELLINGTONIA, 9 yrs, ch h, by Chattanooga out of Araucaria, by Ambrose; at Chamant, France.

WILD DAYRELL II., 13 yrs, b h, by Wild Dayrell out of Rosina, by The Emperor; at High Lodge, Richmond, Yorkshire; 10gs.

YOUNG TRUMPETER, 14 yrs, b h, by Trumpeter out of Eugenie, by Surplice; at High Wycombe, Bucks; 10gs.

ZANZIBAR, 7 yrs, br h, by Saccharometer out of Lady Nyassa, by Stockwell; at Langley Park, Norwich; 10gs.; h-b, 5gs.

SECT. 9.—STALLIONS SUITED FOR GETTING RACEHORSES.

Since this Manual was first published in 1855, the various strains therein alluded to have been so intermixed, that it is quite useless to repeat the remarks there introduced. A "purely in-bred Waxy," for instance, does not exist, and, indeed, almost every modern pedigree will be found to combine the blood of that horse with Orville, &c. It is, therefore, now better to drop all attempts at analysis beyond the last generation, except so far as in-breeding is concerned, and look for the best sire, as proved by experience. Regarded in this way, Touchstone, Melbourne, Stockwell, Orlando, Beadsman, and Newminster, have been far the most successful in modern days, and their sons must on that account also be selected in preference to the sons of less successful sires. Great winners are less likely to be of service than the sires of great winners, and most breeders possessed of judgment would prefer to pay 100 guineas for Monarque than to invest the same sum on Gladiateur. So also, Beadsman was more entitled to 100 guineas than his son Blue Gown, though no doubt the latter was the better runner of the two. Two or three rules may, however, be followed with some prospect of success:—1st. Select (*cæteris paribus*) the sire of a number of winners in preference to an untried horse. 2nd. Look out for such a cross as has been previously found to "hit" (as was exemplified in the numerous instances in which the Touchstone and Bay Middleton blood came together), and if you can find it, prefer it to any other. 3rd. If there has been much

in-breeding in the pedigree of the dam, choose a sire as far as possible removed from her. If, on the other hand, the pedigree is already a good deal crossed, select a successful sire presenting in his best line a similar strain to one of her best. Thus, Sir Joseph Hawley having a mare (Bas Bleu) full of Whalebone blood, passing through excellent lines, but crossed repeatedly with other strains, ventured to put her to Beadsman, who, although by the same grandsire as herself (Touchstone), and consequently out of a great-granddaughter of Whalebone, was by a horse (Weatherbit) almost entirely composed of Herod and Eclipse blood, but the latter descending through other lines than that of Whalebone; the result was Blue Gown, one of the best horses of modern days. Still, theory seems of little use at present, probably owing to the extent to which in-breeding has been carried, and to the small number of distinct sources to which all our horses can be traced. Even Dr. Shorthouse, who has made the Stud-Book the study of his life, has not succeeded in carrying out his practice, if we may judge from the two very moderate animals which have appeared in his name, while his prejudice against the slightest stain of Blacklock has again and again carried him wrong. Still his example should not be allowed to settle the question, as it may be alleged that he has been carried away by his prejudices; but independently of his opinions, I think it may be concluded that breeding of late years in horse-racing, as in coursing, has been very much a lottery. Almost any thorough-bred horse or mare is good enough to produce a first-class runner, but still most breeders will prefer a fashionable strain—that is to say, one in which numerous winners have already existed.

Sect. 10.—Stallions suited for getting Hunters and Steeplechasers.

In the present day, few thorough-bred mares are kept solely with the view of breeding steeplechasers or hunters, their owners preferring to take the chance of a racehorse, failing which, the steeplechase-course or the hunting-field is resorted to. But there are numerous half-bred mares throughout the country in the possession of farmers, and these are generally put to some thorough-bred horse. Thus, in the list of stallions at page 570, numerous horses have fixed prices for half-bred mares, and in their case it will generally be found that very few thorough-bred mares are sent to them. As in the case of breeding racehorses, so here, the blood of almost any sire is good enough, and in choosing one for a half-bred mare, soundness and substance should be the chief points depended on. It is seldom that the breeder of half-bred stock has much choice, because he cannot afford to send his mare any great distance, and as soundness is also somewhat rare, he will have little difficulty in deciding, if he makes this as far as possible a *sine quâ non*.

Modern Arabs have not been of much use of late years in improving our stock, either of racehorses, hunters, or hacks. Colonel Angerstein tried Marengo, Napoleon's Arab charger, with several good mares, but none attained an ordinary county-plate horse's form. The same has been the case with the four Arabians in his late Majesty's stud; and the last successful hit with this blood was Fair Ellen, in 1806, by the Wellesley Arab. She was the dam of Lilias, a winner of the Oaks, and of some other stock moderately successful; but I suspect that the time is only now coming when the full benefit will be derived from this fresh infusion of Eastern blood. Safeguard, who was a great-great-grandson of the Wellesley Grey Arabian, has been of great service in the breeding stud, many valuable mares by him having been sprinkled over the country. Unfortunately, his blindness always prevented his employment with valuable mares, coupled also with the prejudice against modern Arabian blood; but his soundness in every other respect, the exceptional nature of his blindness, the extraordinary goodness of his legs and feet, and his wonderful constitution, together with his success as a sire, considering the inferior mares put to him, mark the value of his blood, whether depending or not on his Arab cross. It was formerly supposed that Arabian mares were the *desideratum*, and that their employment would at once lead to an improvement of the racing stud, but since they have been tried there has been no greater success. The legs and feet of Arabs are cer-

tainly very enduring, and in that respect they would no doubt benefit our road-horses; but they are deficient in size, power, stoutness, and pace, and their immediate descendants are invariably beaten by the English racer.

Sect. 11.—Sires of Trotters.

If these horses are desired to be bred, a trotting mare should be put to a trotting horse like Shepherd F. Knapp, although his price is 20 gs. Many breeds of our racehorses will be likely to produce stock with good trotting action, sufficient for hacks or harness-horses, but seldom enough for match purposes, though in America most of their fastest trotters are from crosses with the thorough-bred English racehorse.

Sect. 12.—Concluding Remarks on Breeding.

In the remarks contained in the last two chapters, I have endeavoured to show a few of the best and most clearly ascertained rules for breeding fast and stout horses of all kinds. That we possess a breed superior to all others in speed is admitted by universal consent, and no horse of really foreign blood will dare to dispute the palm either in England or within any moderate distance. With the large allowance given in the Goodwood Cup weights, none but horses of English blood ever appear; and though some born out of England have succeeded, yet they have uniformly been descended from our best blood, as recently with Gladiateur, and in previous years with various horses from Baroncino to the above celebrated horse. But that our horses which have been used to good keep for generations can compete in enduring bad food and exposure to the weather with others which have been reared on a common is perfectly absurd; and we might just as well expect an Englishman to thrive at Sierra-Leone like a native, as that our carefully-reared horses should keep fat and healthy upon a small allowance of barley and musty straw, or even worse fodder. Like their masters, they require strong food, and with that they, like them, will beat the world. Without it they become diseased, and rapidly fall away till they are beaten by a costermonger's donkey, who would thrive upon their rejected litter if necessary. A native of a warm climate, the horse in our cold winters requires good food at all events, and, if possible, a warm stable; but the former is indispensable, and without it he will soon show the evidences of his constitutional requirements. All, therefore, must be taken into consideration in breeding for any particular purpose; and if hardy chargers are required, capable of withstanding cold, wet, and hunger, they can only be obtained in this kingdom in the mountains of Wales or of Ireland; and even there seldom of good size. Many of our best mares are spoiled by cold and starvation, being often turned out of a training-stable upon a bare pasture at the end of the year, and allowed to expose themselves to all the vicissitudes of the weather. After this they are in due course put to a horse who is as much overdone with warmth and stimulating food, and the result is an unhealthy, misshapen foal, resembling neither the sire nor dam. Both should be more carefully kept in health, and a little of the corn bestowed upon the stallion might well be shared with his harem. It is very important that breeders should be more careful than they are in selecting their sires and dams free from hereditary disease.

There can be no doubt that if a stallion has done no work he will get better stock than if he has been run to his utmost powers; but at the same time it is equally true that a horse tried and not found wanting, is more likely to do good as a sire than one which has failed in his trial, either from a want of pace or from unsoundness, or from bad temper or excessive irritability. Hence it is the custom at present, founded upon just conclusions, to try a horse for one or two seasons, and if he is successful in his attempts, to put him to the stud, where he often will earn more money than by the most continued successes in winning those stakes which alone are open to aged horses of good character—such as the Queen's Plate, and the few great weight-for-age races. Thus, Stockwell and his sons, Blair Athol and St. Albans, have earned enormous sums, the younger horses even in their first year; but fashion reigns supreme in this particular, and a horse which may command a full subscription this year, may next

season be almost deserted; all depending on the number of winners of his blood in the current season. Defence mares might at one time be had for hack prices; afterwards they were not to be had for love or money. Until Sir Tatton Sykes won the St. Leger (and he could have won the Derby if he had been properly ridden), Melbourne was not worth 100*l.*, or very little more; then he rose rapidly in value; and after West Australian's successes he earned his 2000*l.* a year. So was it with Birdcatcher; whilst, on the other hand, Harkaway opened with 100 gs., and soon came down to 20 gs. Whalebone, at 7 years of age, after winning the Derby, was sold for 160*l.* to Lord Jersey, while his brother, Whisker, was bought for 500*l.* at the same sale, untried,; and though he also won the Derby, he was not quite equally successful as a sire.

Breeding is doubtless in great measure a lottery, and this is not to be wondered at when it is remembered how small is the difference between the first and the last horse in the race. Supposing that in a produce stake 40 foals are entered, and 30 come to the post, there will not probably be two seconds elapse between the time of the first passing the winning-post and that of the last —calculating that all persevere, and allowing 30 yards per second; so that after all it is no great wonder that in so many cases the attainment of those two seconds cannot be achieved. The slightest giving way in the machinery, or any disproportion of parts, is quite sufficient to do this; and the wonder is perhaps less that there are so many failures than that so many are bred within two or three seconds of one another. One thing, however, is certain, that without good judgment no lengthened success is likely to be achieved, and though ill-luck will sometimes mar the most carefully-formed schemes, yet something more than good fortune is required. Perseverance is another essential, and when this is wanting it cannot be surprising that the laurels which have been planted by one hand, however scientific, should be worn in the form of a chaplet by another. Continued ill-success is very disheartening, yet, if it is manfully withstood, it will generally end in a series of events of an opposite character; but where failure is not so much the result of ill-luck as of fraud and robbery, it cannot occasion surprise that our best supporters of the turf decline the contest. It is to be hoped, however, that if this is the case they will still breed equally useful horses, adapted to improve our hunters, hacks, and cavalry horses, and to keep up our reputation as the possessors of a breed of horses unrivalled in Europe for each and all of these purposes.

Sect. 13.—Asserted Decline in Horse-breeding.

It is generally believed that while the price of horses is admittedly on the increase to the extent of nearly 100 per cent., there is a proportionate decrease in the numbers bred throughout the country. The Stud-Book shows unmistakably that there has been a gradual diminution in the number of foals of this class dropped in each year during the last decade; but that is probably owing to the conclusion arrived at by most breeders that it is a waste of money to breed from a discarded "weed," altogether worthless for racing purposes. Formerly a considerable number of thorough-bred mares were in the hands of farmers, either singly or in twos and threes, but such cases are now very rare, and nearly all of the foals entered in the Stud-Book belong to regular studs, the managers of which know better than to breed from inferior animals of either sex. It is, however, by no means clear that the diminution of the number of half-bred horses is so great as it is asserted to be. It is undeniable that the difficulty in procuring them is largely increased, and this is specially true of machiners, many of which are now imported from Normandy and Belgium, and a few from greater distances. But though the price is higher and the market badly supplied, it must be remembered that the quantity demanded for horsing street cabs, omnibuses, and tramways, is enormously increased since the institution of railways. Forty or fifty years ago towns with 25,000 inhabitants were satisfied with half a dozen flies, which were only to be obtained by order, no public stands being known out of the metropolis. In London the hackney coach was the only street vehicle, and of these not above 1000 were in existence, supplemented by the "glass coach" for

social purposes near home, and by the post-chaise for longer journeys. Probably in London not more than 5000 or 6000 horses in all were kept for public use, over and above the coach-horses and posters, whereas in the present day the omnibus horses alone are treble that number, while the cab horses amount to fully as many more. Again, taking the large towns, such as Liverpool, Manchester, Birmingham, &c., the increase is still greater, because in them at the time I speak of there were no hackney coaches, and only a very limited supply of flies. It is quite true that there is a set-off in the stage-coach department, the stoppage of which, caused by the introduction of railways, has liberated a considerable number of horses along the principal roads of the country; but the establishment of omnibuses to meet every train stopping at the railway stations requires quite as many, and therefore it may be estimated that the street cabs and omnibuses in the various provincial towns with inhabitants varying from 10,000 or 15,000 to 300,000, together with those of London itself, must all be estimated as beyond the stock of 1825. Then, again, we must calculate the extraordinary increase in hunters during that time, both in number and price. There are now fully 20,000 of these horses, and probably many more, whereas in the early part of this century it was rare to see a "field" of more than 40 or 50, except in two or three favoured hunts. Altogether, therefore, we may pause before we come to the conclusion that the number of horses in England has diminished of late years, though of course it cannot be disputed that the price has risen for all kinds, and that the supply is now insufficient for the demand.

PART II.

RACING IN ALL ITS BRANCHES.

BOOK VII.—PEDESTRIANISM, AND THE GENERAL TRAINING OF MAN.

CHAPTER I.

PEDESTRIANISM AND ATHLETIC SPORTS.

SECT. 1.—WALKING, RUNNING, AND LEAPING.

PEDESTRIANISM is without doubt one of the oldest descriptions of sport in existence, inasmuch as it is carried on with the implements assigned by nature to the human frame without any external aid whatever. Pedestrianism "proper" is usually understood to include a walking or running contest between two or more men, or between man and time; but jumping, throwing the hammer, putting the weight, and occasionally other contests, are included in the amateur athletic sports which have now become so popular.

IN RACE WALKING, what is termed "quick" walking is the only kind of any use, and this description of contest requires more pluck, good condition, and endurance, than any other kind of pedestrian exercise, the difficulty consisting in being obliged to place the heels on the ground first, and at the same time maintaining a continued high rate of speed. In order to accomplish this the whole muscular system of the human frame requires to be brought into play, not only of the feet, legs, and loins for actual locomotion, but of the ribs, shoulders, chest, and arms, to lighten the weight of the body on the heels. Fair walking may be defined as "toe and heel," *i.e.*, with one foot always on the ground, and the heel always touching the ground first, in contra-distinction to running, wherein both feet are off the ground at the same time, and the toe first touches *terra firma*. In other words, walking is a succession of *steps*; running, of *leaps*. The heel, then, should touch the ground first, and be dug firmly in to obtain a good spring for the next step. The ball of the foot and toe should be dwelt on as little as possible, in order not to lose time in the stride, in addition to the risk of throwing the weight of the body on the toes, and thereby causing the walker to run. A great point is to throw the legs well out at each stride, at the same time twisting the corresponding hip and loin completely round—the right side towards the left, and the left towards the right. By so doing the feet touch the earth in an almost straight line, and prolonged length of stride is acquired. Meanwhile the upper part of the body should by no means be idle, as the arms must be kept up, the elbows slightly bent, and the shoulders be swung well across the chest in an upward direction, alternately with each stride; thus the heels are to a certain extent relieved of the weight of the trunk. It is essential to fair and fast walking that the body should be kept strictly upright, with the shoulders thrown back, the chest out, and last, but by no means least, the knee-joints must be kept as rigid as possible. "Genuflections" throw the weight of the body on the toes, and are the primary cause of "lifting." The chief complaints which trouble a walker are what is termed "shin soreness" and stitch. If the former comes on very badly, the only thing is to stop and rub the legs, as it is caused by weakness, and gradually disappears after a few fast walks. In a case of stitch, the best method is to "grin and bear it," and persevere, in which case it generally disappears. A pedestrian cannot start too fast in a walking race, as after the first few hundred yards he gains his second wind, and then settles down into a regular stride, the motion becoming almost mechanical. The conditions of walking matches are, that they shall be fair "toe and heel;" and a referee is appointed to see that this rule is not infringed. One or more

cautions are generally given by this official, according to the conditions of the match, before a competitor is disqualified, in which case he entirely loses his chance. Tables of the best performances in this and other pedestrian sports will be found in the next chapter.

Running may be divided into three heads—viz., sprinting, which generally includes all distances up to 400 yards; medium distances, from one quarter to three quarters of a mile inclusive; and lastly, long distances, from one mile upwards. The first is very much in vogue, and is by far the most favourite class of pedestrianism, whether amongst amateurs or professionals. In fact, at Sheffield, the birthplace and nursery of professional sprinting, hundreds of thousand pounds are annually won and lost over handicaps; and the scene at the Hyde Park Cricket Ground, when the men are on their marks for the final heat of an All England Whitsuntide, Doncaster race week, or Sheffield fair handicap, is one of such intense excitement that it must be seen to be realized. The reason of the prevalence of sprinting over other distances is, that it is more suitable to nine pedestrians out of ten, and requires less arduous training. A great point in all kinds of running is to go lightly and well on the toes, with freedom of action from the hips, whilst in sprinting a *sine quâ non* is being able to start well; in fact, half the hundred-yard races run are won by the start. A foot apart is quite enough to keep the feet on the mark. The body should be kept with a slight inclination forward, and the weight on the hindermost foot; by no means in a bent-double position, or with the feet a yard apart, as one too often sees. On receiving the signal, the pedestrian cannot get off too quickly, two or three short steps being taken to get fairly into the stride, after which he should look straight before him, set his eyes steadfastly on the tape, and race away for it with a good stride, above all things picking his feet up quickly off the ground and not dwelling thereon; also taking care not to get out of stride or swerve to the right or left. In sprinting, the whole course may be run at top speed, since the exertion is not so prolonged as in long-distance running. As sprint races are almost invariably run in heats, care must be taken to keep out of the hot rays of the sun and away from excitement during the intervals. The most refreshing method of resting is to lie on the back with the head and feet raised, and should nature require sustaining, to partake of a small quantity of brandy in cold tea, and a dry rusk or crust of bread. At the commencement of training for sprints, the pedestrian should run from three to four hundred yards to get the requisite muscles into play. Of "medium distances," a quarter mile is the most difficult; in fact, no more trying or exhausting race can be named, inasmuch as the pedestrian is obliged to run at top speed throughout, and therefore requires endurance as well as pace. A man should begin by running from half to three quarters of a mile, according to the distance, and afterwards commence by going 300 yards or so at top speed. "Light weights" are the best at long-distance running, provided they have good pluck and wind, as they get over the ground with less exertion to themselves, and consequently do not tire so soon. In fact, it will be found that our great "long-journey" pedestrians (with the notable exception of "Deerfoot") have been invariably light, wiry, and springy men. The best distance to commence this class of running is a mile, gradually increasing the length of the day's spin according to the distance to be accomplished in the race. In no case, however, should the full distance be run before the actual contest itself, as doing so tires the pedestrian and makes him stale.

Hurdle-Racing is one of the prettiest of our pedestrian exercises, but is hardly ever practised by professionals. Amongst amateurs, however, it is much in vogue. The usual distance is 120 yards with 10 flights, 3 ft. 6 in. high, and 10 yards apart, which leaves 15 yards at each end. The obstacles should be "bucked" or taken in the stride, as much time is lost by halting to leap them. This method, however, requires long and assiduous practice, and there are few who are A 1 at it. It is almost needless to add that care must be taken not to touch a bar, as "topping" an obstacle almost invariably proves fatal to success.

Leaping is effected by a sudden contraction of the legs followed by a still more sudden and jerking extension of

all the joints, by which the body is projected into the air, clear off the ground. In all leaps, besides those of the lower limbs, the whole of the muscles are violently in action, and especially those of the abdomen and back. In the running high leap, a run of ten to a dozen paces should be taken, but the distance varies according to habit with almost every leaper. Too long a run, however, is apt to exhaust the jumper needlessly. The take off should be at a distance of about half the height to be cleared. The legs should be brought well under the body, and care taken to get the trunk in addition to the limbs clear of the obstacle. In a standing high jump the legs should be brought close together, the knees considerably bent, the hips thrown back and shoulders forward, with the head well up. The arms are swung backwards and forwards, the body sinks till the calves touch the back of the thighs, and then by a rapid extension of all parts in unison with the swing of the arms, the body is projected over the height to be cleared, and descends on the toes and balls of the feet. In the running wide leap, a longer preparatory run of twenty to twenty-five short and quick paces is required, great care being taken not to get out of step, and to take off as close to the score as possible. The leaper should alight on his heels; and in case any part of the body touches the ground behind his hindermost heel, the jump is a foul one, and cannot count. A standing wide leap is effected in the same way as a high one, with less contraction of the legs and more swinging of the arms.

Hop, Step, and Jump, is a kind of leaping now almost obsolete, and consists of a long hop, a long step, and a long jump at one flying start.

Pole Leaping is almost invariably practised over a height. The pole should be of fir or ash, from eleven to twelve feet in length, according to the height of the leaper; it should taper towards the top, and have a steel spike at the foot. It must be grasped firmly, with the hands from two to three feet apart, and the uppermost one at about the height to be cleared. A run of from twelve to fifteen paces should be taken, and the attention fixed on the bar or other object to be cleared. The weight of the body must be raised by the arms, the legs at the same time surmounting the obstacle. While in the air the face is reversed from the side to which the body springs to that from which it sprung. On reaching the bar the pole must be let go and dropped on the taking off side.

Sect. 2.—Other Sports at Athletic Meetings.

With walking, running, and leaping, other sports are almost always included at our athletic meetings. The chief are the following:—

Throwing the Hammer is an innovation from over the border. The usual weight of the hammer-head is 16lb., with a handle from 3 feet to 3 feet 6 inches long, according to the height of the thrower. A wild kind of war-dance should be taken in the direction to be thrown, the hammer being swung round in a plane at right angles to the vertical position of the body. A final impetus should be given in the last half of the last turn, as the greatest momentum is thus acquired as the handle leaves the hands. Care must be taken during the run to keep the missile low, otherwise the curvature of its flight will be too high. The throwing does not take place from any score, the distance being measured from the footstep of the competitor nearest the fall of the head of the hammer.

In Putting the Weight (usually 16lb.); two lines, 7 feet apart, are drawn on the ground, over the foremost of which the weight (generally a cannon-ball) has to be put by the competitor. No part of the body may pass the limit between these lines either before or after the "put." The weight of the body ought to be on the right foot, which should be placed on the hindermost line, the left being rested lightly, about midway between the two scores, with the weight of course in the right hand. The competitor should then rise and fall on the balls of the feet, shifting to and fro, and gradually gaining an impetus, the hand supporting the weight resting on the shoulder. When a sufficient impetus is thus obtained, the left leg should be made a pivot, round which the right leg and the body are swung till the right foot touches the further line, at which instant the weight should be let go with as much final impulse as possible to help it on its way. Immense strength in the

shoulders, back, and loins are requisite to be A 1 at this pastime. "Puts" of over 40 feet have been accomplished by professionals in Scotland with the 16lb. weight.

SECT. 3.—ARTICLES OF AGREEMENT.

In the case of professional matches articles of agreement are usually drawn up and signed. The following is the form in general use, subject, of course, to alterations according to the description of the contest:—ARTICLES OF AGREEMENT, entered into this day of 187 , between and for £ a side. of agrees to [walk] of over for £ a side, on the day of 187 . £ a side is now down in the hands of , to be made into £ a side on the day of , and to be the final stakeholder. The referee to be . The men to start by mutual consent, and if not off in minutes, to go by the first report of a pistol; the referee to appoint a person to fire the pistol, and either man leaving his station before the pistol is fired, to be put back each time. The men to be at their stations at o'clock in the . In the event of any question arising which may not be provided for in these articles, the referee to have full power and authority to decide such question, his decision to be final and conclusive. This official to receive a sum of [usually 5 per cent.] for officiating, such sum to be deducted from the winnings by the stakeholder, or in equitable proportions from each stake in the event of a draw. No payment to be made if a forfeit take place. The stakeholder shall in any and every case be exonerated from all responsibility upon obeying the direction of the referee. Either party failing to comply with any or all of these articles to forfeit all moneys down.

} Signatures.

Witness

SECT. 4.—LAWS OF ATHLETICS.

The laws governing amateur pedestrian contests, as in force at the Amateur Champion Meetings and at Oxford and Cambridge Universities, are as follows:

1. No attendant to accompany a competitor on the scratch or in the race.

2. Any competitor starting before the word to be put back one yard, at the discretion of the starter. On a repetition of the offence, to be disqualified.

3. All races to start by report of pistol.

4. In hurdle-races each competitor to keep his own hurdles throughout.

5. In sprint racing each runner to keep his own course.

6. Jostling, running across, or wilfully obstructing another so as to impede his progress, to disqualify the offender from any further competitions held by the club.

7. All cases of dispute to be referred to the committee of management at the time.

8. The decision of the judges in all competitions to be final.

9. In pole leaping and high jumping, three tries at each height. The height at each successive elevation to be determined by the majority of the competitors. Displacing the bar only to count as a try.

10. In broad jumping and weight putting, three tries, and throwing the hammer two tries, allowed. The three best competitors of the first trials to be allowed three more tries each for the final. The furthest throw of the five attempts, and put or jump of the six attempts to win.

11. In hammer throwing and weight putting, the length of the run to be limited to seven feet, the weight to be delivered from the shoulder.

12. In broad jumping and weight putting, crossing the scratch-line in the attempt, to count as no try; and in hammer throwing, as no throw.

13. No tries and no throws count as tries.

14. The weight of the hammer and weight to be 16lb. each.

15. The length from the end of the handle of the hammer to the bottom of the sphere to be 3ft. 6in. over all.

16. No put or throw to count if the weight or hammer be delivered or followed with any part of the body touching the ground over the mark. All puts and throws to be measured from the edge of the pitch nearest the scratch-line to the scratch-line, and at right angles with the same.

17. In hurdle races the height of the hurdles when fixed to be 3ft. 6in., measured perpendicularly from the ground to the top bar.

18. Definition of an Amateur.—Any person who has never competed in an open competition, or for public money, or for admission money, or with professionals for a prize, public money, or admission money; nor has ever, at any period of his life, taught or assisted in the pursuit of athletic exercises as a means of livelihood; nor is a mechanic, artisan, or labourer.

Sheffield Handicap Rules.

The following rules were drawn up by the Association of Sheffield Running Ground Proprietors for the conduct of their celebrated sprint-handicaps :—

1. That three officials be appointed to see the proper carrying out of all handicaps of 10*l.* and upwards—viz., a referee, pistol-firer, and starter.

2. That the starter shall conduct the men to their proper mark, and shall instruct the pistol-firer when the men are ready; and in the event of any of the runners gaining any undue advantage, he shall be empowered to call "No start."

3. That any runner leaving his mark with either foot, previous to the firing of the pistol, shall for the first offence be put back one yard; for the second, two yards; and for the third, shall be disqualified.

4. That any runner acting unfairly towards an opponent shall be disqualified for six months; the officials having power to decide the question. The men left in to run the heat over again.

5. That in the event of a dead heat the stakes and bets shall be divided.

6. That a box shall be provided for the pistol-firer, so constituted that the runners cannot see the flash from the pistol.

7. That any handicapper advertising a handicap, and failing to close, bring out the cards, or run the handicap on the day appointed, shall be fined—for a handicap of 10*l.* and under 23*l.* the sum of 1*l.*; for 23*l.* and under 35*l.* 2*l.* 10*s.*; for 35*l.* and upwards, 5*l.*

8. That any handicapper known to have any interest in, or time any man in a trial or otherwise for a handicap in which he is concerned, shall be fined 5*l.* for such offence.

9. Any handicapper known to be tampering with a man by giving him starts, to induce other handicappers to give him a longer start than he would be entitled to on his merits, shall be fined 5*l.* Any one making the charge shall deposit 1*l.* with the committee. If he fails to prove his case, he shall lose the money so deposited; but if he proves the charge he shall receive 1*l.* from the fine so inflicted.

10. That any handicapper being fined, and refusing to pay the fine so inflicted, shall not be allowed to have another handicap till the fine be paid.

11. That an annual meeting be held for the purpose of electing a committee to see the proper carrying out of the above rules.

Sect. 5.—Timing Men.

This is a most difficult operation to perform in the case of sprint races, and requires a life-long apprenticeship. In fact, few but professionals are thorough adepts at the art. The only true method is the professional one of starting the watch by the *flash*, *not* the *report* of the pistol, and stopping it directly the pedestrian breasts the tape. The eye must not be taken off the muzzle of the pistol for a single instant, and a *perfect unison* of the two senses of seeing and feeling is absolutely necessary. Care must be taken that the watch is a reliable one, and that the distance run is correctly measured.

CHAPTER II.

BEST PEDESTRIAN AND ATHLETIC PERFORMANCES ON RECORD.

[*Corrected to June* 1, 1878.]

SECT. 1.—AMATEUR WALKING.

Distance.	Time.	Name and Club.	Age.	Weight.	Height.	Date and Place.	Referees.
	H. M. S.			st. lb.	ft. in.		
1 mile.	0 6 48	T. Griffith,[1] S. Essex A.C.	26	10 2	6 0	Aug. 6, 1870, Leeds.	J. H. Kitson, Leeds A.C.
2 miles.	0 14 20	T. Griffith,[2] S. Essex A.C.	27	,,	,,	April 27, 1872, Ealing.	J. E. Kent, *Bells Life*.
3 ,,	0 22 15	W. J. Morgan,[3] Atalanta R.C.	30	8 6	5 5¼	Mar. 22, 1875, Lillie Bridge, London.	T. Griffith and J. G. Chambers.
4 ,,	0 30 14	,,	,,	,,	,,	,,	,,
5 ,,	0 38 12	,,	,,	,,	,,	,,	,,
6 ,,	0 45 28½	H. Webster,[4] Knotty Ash.	,,	,,	,,	Mar. 26, 1877, Lillie Bridge, London.	S. Dixon.
7 ,,	0 53 47	W. J. Morgan,[5] Atalanta R.C.	,,	,,	,,	Mar. 22, 1875, Lillie Bridge, London.	T. Griffith and J. G. Chambers.
8 ,,	1 8 50	F. Pace,[6] London.	24	10 0	5 11	Mar. 11, 1865, Prince of Wales Ground Bow.	C. Westhall.
9 ,,	1 17 45	,,	,,	,,	,,	,,	,,
10 ,,	1 26 37	,,	,,	,,	,,	,,	,,
11 ,,	1 37 35	C. Connor, New York.	21	10 8	5 8	Jan. 27, 1877, New York.	W. J. K Kenricks, J. M. Pellock, and C. C. Shaw.
12 ,,	1 47 9	,,	,,	,,	,,	,,	,,
13 ,,	1 56 56	,,	,,	,,	,,	,,	,,
14 ,,	2 7 10	,,	,,	,,	,,	,,	,,
15 ,,	2 18 13	,,	,,	,,	,,	,,	,,
16 ,,	2 30 14	J. Berry,[7] London A.C.	,,	9 12	,,	May 6, 1876, Lillie Bridge, London.	W. Waddell, L.A.C.
17 ,,	2 39 55	,,	,,	,,	,,	,,	,,
18 ,,	2 49 55	,,	,,	,,	,,	,,	,,
19 ,,	2 59 57	,,	,,	,,	,,	,,	,,
20 ,,	3 9 54	,,	,,	,,	,,	,,	,,
21 ,,	3 20 6	,,	,,	,,	,,	,,	,,
22 ,,	3 30 37	,,	,,	,,	,,	,,	,,
23 ,,	3 41 6	,,	,,	,,	,,	,,	,,
24 ,,	3 52 1	,,	,,	,,	,,	,,	,,
25 ,,	4 2 42	,,	,,	,,	,,	,,	,,

AMATEUR WALKING (*continued*).

Distance.	Time.	Name and Club.	Age.	Weight.	Height.	Date and Place.	Referees.
	H. M. S.			st. lb.	ft. in.		
26 miles.	4 17 17	C. W. Ford,[8] Dublin A.C.	21	10 8½	5 9	Oct. 13, 1877, Lansdowne Road, Dublin.	F. J. Ball, H. W. D. Dunlop, J. A. Ford, E. O. Milward, and J. H. Stewart.
27 ,,	4 27 49	,,	,,	,,	,,	,,	,,
28 ,,	4 38 10	,,	,,	,,	,,	,,	,,
29 ,,	4 48 48	,,	,,	,,	,,	,,	,,
30 ,,	4 59 27	,,	,,	,,	,,	,,	,,
31 ,,	5 10 12	,,	,,	,,	,,	,,	,,
32 ,,	5 21 21	,,	,,	,,	,,	,,	,,
33 ,,	5 31 55	,,	,,	,,	,,	,,	,,
34 ,,	5 42 48	,,	,,	,,	,,	,,	,,
35 ,,	5 53 35	,,	,,	,,	,,	,,	,,
36 ,,	6 4 13	,,	,,	,,	,,	,,	,,
37 ,,	6 14 55	,,	,,	,,	,,	,,	,,
38 ,,	6 25 41	,,	,,	,,	,,	,,	,,
39 ,,	6 36 6	,,	,,	,,	,,	,,	,,
40 ,,	6 46 19	,,	,,	,,	,,	,,	,,
41 ,,	6 56 39	,,	,,	,,	,,	,,	,,
42 ,,	7 7 2	,,	,,	,,	,,	,,	,,
43 ,,	7 17 6	,,	,,	,,	,,	,,	,,
44 ,,	7 27 35	,,	,,	,,	,,	,,	,,
45 ,,	7 38 4	,,	,,	,,	,,	,,	,,
46 ,,	7 48 44	,,	,,	,,	,,	,,	,,
47 ,,	7 59 31	,,	,,	,,	,,	,,	,,
48 ,,	8 10 9	,,	,,	,,	,,	,,	,,
49 ,,	8 20 8	,,	,,	,,	,,	,,	,,
50 ,,	8 29 36½	,,	,,	,,	,,	,,	,,
73 ,,	18 50 0	F. Boydell and E. G. Peacock.[9]	,,	11 12 10 6	,,	May 26, 1859, London to Dover.	R. Fuller, Paddington.

[1] Griffith, in Leeds A.C. two-miles race on the Grammar School Cricket Ground, defeated A. Gomersal, Dalton; J. E. Bentley, London A.C.; and W. Tebbs, Sheffield F.C. Two miles, 14m. 34½s.

[2] Griffith gave J. Lewis, Great Western Railway A.C., 1 minute start in a two-miles match at Green Man Ground, Ealing, and won easily.

[3] Morgan, in seven-miles amateur championship race, beat H. Webster, Victoria A.C. (Stoke-on-Trent), and J. H. Becke, Oxford University A.C., easily. 1 mile, 6m. 55s.; 2 miles, 14m. 34s. Weather fine.

[4] Webster, in seven-miles amateur championship race, beat W. J. Morgan, Atalanta R.C., after a grand race, by a foot.

[5] See note 3.

[6] Pace won easily in a ten miles match with H. W. Petherick. 1 mile, 7m. 50s.; 2 miles, 16m. 29s.; 3 miles, 25m. 2s.; 4 miles, 33m. 30s.; 5 miles, 42m. 30s.; 6 miles, 51m. 10s.; 7 miles, 59m. 52s. Very high wind.

[7] Berry, in a twenty-five miles walking race, for a claret-cup given by Mr. W. Waddell, defeated 39 competitors, winning by nearly a mile from W. M. Green, T.H. and H. 5 miles, 46 m. 57s.; 10 miles, 1h. 33m. 44s.; 15 miles, 2h. 20m 44s.

[8] Ford, in a private match against W. C. Williams, won easily, as the latter gave up early in the race. 5 miles, 48m. 50s.; 10 miles, 1h. 37m. 9s.; 15 miles, 2h. 26m. 18s.; 20 miles, 3h. 16m. 28s.; 25 miles, 4h. 6m. 56s.

[9] The late F. Boydell and the late E. G. Peacock, both of the London R.C., undertook to walk from London to Dover (73 miles) in 23 hours, over a hilly road, and won easily.

GREATEST DISTANCE PERFORMANCE (AMATEUR).

The late Captain R. B. Allardice, 23rd Fusiliers, walked 1000 miles in 1000 consecutive hours, one single mile in each single hour, on Newmarket Heath, between June 1 and July 12 inclusive, 1809, for a bet of 1000 guineas a-side, the late Mr. Wedderburn Webster backing time. Relays of umpires and timekeepers watched him throughout. Capt. Allardice was 29¾ years of age, 5ft. 10¼in. in height, weighed 13st. 4lb. at starting, and 11st. at the finish.

Sect 2.—Professional Walking.

Distance.	Time.	Name.	Age.	Weight.	Height.	Date and Place.	Referees.
1 mile.	H. M. S. 0 6 23	W. Perkins,[1] Old Kent Road.	21	st. lb. 9 4	ft. in. 5 6	June 1, 1874, Lillie Bridge.	E. Smith, of *Bell's Life*.
2 miles.	0 13 30	,,	,,	,,	,,	,,	,,
3 ,,	0 20 47	,,	,,	,,	,,	,,	,,
4 ,,	0 28 59	Ditto.[2]	23	9 6	5 6	Sept. 28, 1875, Lillie Bridge.	J. Vandy, of *Bell's Life*.
5 ,,	0 36 32	,,	,,	,,	,,	,,	,,
6 ,,	0 44 24	,,	,,	,,	,,	,,	,,
7 ,,	0 51 51	,,	,,	,,	,,	,,	,,
8 ,,	0 59 5	Ditto.[3]	25	,,	,,	,,	,,
9 ,,	1 8 7		,,	,,	,,	July 16, 1877.	J. Jenn, of *Bell's Life*.
10 ,,	1 15 57	,,	,,	,,	,,	,,	
11 ,,	1 23 49	,,	,,	,,	,,	,,	,,
12 ,,	1 31 42	,,	,,	,,	,,	,,	,,
13 ,,	1 39 42	,,	,,	,,	,,	,,	,,
14 ,,	1 47 53	,,	,,	,,	,,	,,	,,
15 ,,	1 56 13	,,	,,	,,	,,	,,	,,
16 ,,	2 4 35	,,	,,	,,	,,	,,	,,
17 ,,	2 13 11	,,	,,	,,	,,	,,	,,
18 ,,	2 21 55	,,	,,	,,	,,	,,	,,
19 ,,	2 30 45	,,	,,	,,	,,	,,	,,
20 ,,	2 39 57	,,	,,	,,	,,	,,	,,
21 ,,	2 49 18	,,	,,	,,	,,	,,	,,
22 ,,	2 58 52	,,	,,	,,	,,	,,	,,
23 ,,	3 20 39	The late J. Smith, Ipswich.[4]	35	7 7	5 4½	Nov. 10, 1851, Copenhagen House Ground, Islington.	J. G. Willey, *Bell's Life*, and H. Holt, *Era*.
24 ,,	3 30 58	,,	,,	,,	,,	,,	,,
25 ,,	3 42 16	,,	,,	,,	,,	,,	,,
26 ,,	3 54 18	W. Howes,[5] Hoxton.	38	8 9	5 4	March 30, 1878, Agricultural Hall, Islington.	R. Watson.

[1] Perkins, in this three-mile match, beat W. J. Stockwell by 100yds. ¼ mile, 1m. 22s.; ½ mile, 2m. 56s.; ¾ mile, 4m. 40s. Weather very fine.

[2] Perkins was matched to walk 8 miles in one hour, which he won by 55s. 1 mile, 6m. 46s.; 2 miles, 14m. 13s.; 3 miles, 21m. 37s. Weather fine.

[3] Perkins engaged in a three-hours' walking match with W. Howes, at Lillie Bridge Grounds, July 16, 1877. The weather was very fine, and the contest proved one of the most marvellous ever witnessed on a cinder path. Both of the men walked the longest distance that has yet been accomplished in the three hours; but Perkins was the faster of the two. 1 mile, 6m. 52s.; 2 miles, 14m. 21s.; 3 miles, 21m. 58s.; 4 miles, 29m. 35s.; 5 miles, 37m. 17s; 6 miles, 44m. 59s.; 7 miles, 52m. 42s.; 8 miles, 1h. 0m. 19s. Howes walked 22 miles in 2h. 59m. 54s.

[4] Smith (scratch) won a 25-mile handicap by three yards, defeating the late C. Westhall, Tottenham Court Road, and W. Spooner, Turnham Green (each scratch), the late J. Heaver, Hammersmith, and the late E. Ferguson, Long Acre (each 2m.), and W. Bennett, Ealing (2¾m.). 7 miles, 58m. 30s.; 8 miles, 1h. 6m. 45s.; 10 miles, 1h. 23m. 30s.; 14 miles, 1h. 59m.; 15 miles, 2h. 7m. 40s.; 20 miles, 2h. 53m. 30s.; 21 miles, 3h. 2m. 25s.; 22 miles, 3h. 11m. 35s.

[5] Howes won a 50-mile race open to all comers, at the Agricultural Hall, on March 30, defeating J. Barnes, W. Bolding, A. Clark, W. Corkey, A. Courtney, A. Hancock, O. Hancock, J. M'Leary, J. Mills, M. Myers, W. Perkins, and H. Thatcher.

PROFESSIONAL WALKING (*continued*).

Distance.	Time.	Name.	Age.	Weight.	Height.	Date and Place.	Referees.
	H. M. S.			st. lb.	ft. in.		
27 miles.	4 4 7	W. Howes, Hoxton.	38	8 9	5 4	March 30, 1878, Agricultural Hall, Islington.	R. Watson.
28 ,,	4 14 8	,,	,,	,,	,,	,,	,,
29 ,,	4 24 20	,,	,,	,,	,,	,,	,,
30 ,,	4 34 54	,,	,,	,,	,,	,,	,,
31 ,,	4 45 15	,,	,,	,,	,,	,,	,,
32 ,,	4 55 32	,,	,,	,,	,,	,,	,,
33 ,,	5 5 25	,,	,,	,,	,,	,,	,,
34 ,,	5 14 52	,,	,,	,,	,,	,,	,,
35 ,,	5 24 37	,,	,,	,,	,,	,,	,,
36 ,,	5 34 40	,,	,,	,,	,,	,,	,,
37 ,,	5 45 0	,,	,,	,,	,,	,,	,,
38 ,,	5 55 25	,,	,,	,,	,,	,,	,,
39 ,,	6 6 2	,,	,,	,,	,,	,,	,,
40 ,,	6 16 50	,,	,,	,,	,,	,,	,,
41 ,,	6 21 40	,,	,,	,,	,,	,,	,,
42 ,,	6 38 22	,,	,,	,,	,,	,,	,,
43 ,,	6 49 2	,,	,,	,,	,,	,,	,,
44 ,,	6 58 17	,,	,,	,,	,,	,,	,,
45 ,,	7 7 25	,,	,,	,,	,,	,,	,,
46 ,,	7 17 13	,,	,,	,,	,,	,,	,,
47 ,,	7 27 36	,,	,,	,,	,,	,,	,,
48 ,,	7 37 38	,,	,,	,,	,,	,,	,,
49 ,,	7 47 45	,,	,,	,,	,,	,,	,,
50 ,,	7 57 44	,,	,,	,,	,,	,,	,,
51 to 76 miles.	9 6 16 13 37 26	D. O'Leary,[6] Illinois, U.S.A.	29	10 5	5 8½	Oct. 16, 1875, West Side Skating Rink, Chicago.	W. B. Curtis, New York A.C.
77 to 129 miles.	13 55 5 24 20 36	W. Howes,[7] Hoxton.	38	8 7	5 4	Feb. 23, 1878, Agricultural Hall, Islington.	J. Jenn.

[6] D. O'Leary, in a walking match at Chicago, Illinois, U.S.A., walked the 51st to the 76th miles inclusive in the fastest times yet recorded. His 52 miles were done in 9h. 17m. 58s.: 53 miles, 9h. 27m. 55s.; 54 miles, 9h. 41m. 44s.; 55 miles, 9h. 51m. 52s.; 56 miles, 10h. 3m. 41s.; 57 miles, 10h. 14m. 42s.; 58 miles, 10h. 25m. 4s.; 59 miles, 10h. 35m. 38s.; 60 miles, 10h. 46m. 2s.; 61 miles, 10h. 56m. 40s.; 62 miles, 11h. 7m. 18s.; 63 miles, 11h. 19m. 41s.; 64 miles, 11h. 29m. 50s.; 65 miles, 11h. 40m. 13s ; 66 miles, 11h. 50m. 28s.; 67 miles, 12h. 0m. 44s.; 68 miles, 12h. 11m. 4s.; 69 miles, 12h. 22m. 10s.; 70 miles, 12h. 32m. 31s ; 71 miles, 12h. 43m. 23s.; 72 miles, 12h. 53m. 53s.; 73 miles, 13h. 4m. 37s.; 74 miles, 13h. 15m. 17s.; and 75 miles, 13h. 25m. 44s.

[7] Howes, in a twenty-six hours' competition at the Agricultural Hall, Islington, on Feb. 23, 1878, defeated several opponents, and won a championship belt and 100*l*., having covered 129¼ miles. His 77th to 129th miles were walked in the fastest times on record. He did 78 miles in 14h. 5m. 32s.; 79 miles, 14h. 17m. 5s.; 80 miles, 14h. 27m. 10s.; 81 miles, 14h. 37m. 25s.; 82 miles, 14h. 48m. 1s ; 83 miles, 14h. 57m. 25s.; 84 miles, 15h. 7m. 24s.; 85 miles, 15h. 17m. 43s.; 86 miles, 15h. 28m. 7s.; 87 miles, 15h. 40m. 3s.; 88 miles, 15h. 49m. 40s.; 89 miles, 15h. 59m. 55s.; 90 miles, 16h. 10m. 20s ; 91 miles, 16h. 27m. 37s.; 92 miles, 16h. 38m. 4s.; 93 miles, 16h. 48m. 36s.; 94 miles, 16h. 59m. 20s.; 95 miles, 17h. 10m. 17s.; 96 miles, 17h. 21m. 30s.; 97 miles, 17h. 32m. 55s.; 98 miles, 17h. 44m. 35s ; 99 miles, 17h. 57m. 19s.; 100 miles, 18h. 8m. 20s,; 101 miles, 18h. 20m. 52s.; 102 miles, 18h. 32m. 50s.; 103 miles, 18h. 44m. 54s.; 104 miles, 18h. 57m. 10s.; 105 miles, 19h. 9m. 0s.; 106 miles, 19h. 21m. 55s.; 107 miles, 19h. 35m. 15s.; 108 miles, 19h. 46m. 45s.; 109 miles, 19h. 58m. 16s.; 110 miles, 20h. 9m. 15s.; 111 miles, 20h. 20m. 23s.; 112 miles, 20h. 31m. 43s.; 113 miles, 20h. 43m. 57s.; 114 miles, 20h. 55m. 37s.; 115 miles, 21h. 7m. 27s.; 116 miles, 21h. 19m. 30s.; 117 miles, 21h. 31m 46s.; 118 miles, 21h. 43m. 21s.; 119 miles, 21h. 55m. 16s.; 120 miles, 22h. 6m. 25s.; 121 miles, 22h. 16m. 21s.; 122 miles, 22h. 28m. 22s.; 123 miles, 22h. 41m. 4s.; 124 miles, 22h. 56m. 48s.; 125 miles, 23h. 9m. 47s ; 126 miles, 23h. 24m. 49s.; 127 miles, 23h. 43m. 7s.; and 128 miles, 24h. 3m. 20s.

Professional Walking (*continued*).

Distance.	Time.	Name.	Age.	Weight.	Height.	Date and Place.	Referees.
	D. H. M. S			st. lb.	ft. in.		
130 to 173 miles.	1 1 50 55 1 14 28 13	H. Vaughan,[8] Chester.	28	10 7	5 11	May 17, 18, and 19, 1877, Pomona Gardens, Manchester.	G. W. Atkinson, C. Conquest, and C. Haslam.
174 to 226 miles.	1 15 5 48 2 4 59 38	D. O'Leary,[9] Illinois, U.S.A.	31	10 5	5 8¼	April 2 to 7, 1877, Agricultural Hall, Islington.	G. W. Atkinson, C. Conquest, A. G. Payne, J. Watson, and J. G. Chambers.
227 to 241 miles.	2 5 23 19 2 8 48 37	Ditto.[10]	,,	,,	,,	March 1, 2, and 3, 1877, Pomona Gardens, Manchester.	H. Cooper, C. Drury, C. Haslam, and W. H. Mounsey.
242 to 287 miles.	2 9 2 37 2 21 22 22	P. Crossland,[11] Sheffield.	36	10 10	5 7	,,	,,
288 to 519 miles.	2 22 22 18 5 20 29 50	D. O'Leary,[12] Illinois, U.S.A.	31	10 5	5 8¼	April 2 to 7, 1877, Agricultural Hall, Islington.	G. W. Atkinson, C. Conquest, A. G. Payne, J. Watson, and J. G. Chambers.

[8] Vaughan, at Pomona Gardens, Manchester, on May 17, 18, and 19, 1877, in a forty-eight hours' walking match with P. Crossland, whom he easily defeated, walked from 130 to 173 miles in the fastest times on record. He did 131 miles in 1 day 2h. 35m. 0s.; 132 miles, 1d. 2h. 47m. 5s.; 133 miles, 1d. 2h. 58m. 54s.; 134 miles, 1d. 3h. 11m. 57s.; 135 miles, 1d. 3h. 26m. 27s.; 136 miles, 1d. 3h. 38m. 15s.; 137 miles, 1d. 3h. 50m. 30s.; 138 miles, 1d. 4h. 2m. 58s.; 139 miles, 1d. 4h. 18m. 59s.; 140 miles, 1d. 4h. 46m. 5s.; 141 miles, 1d. 4h. 59m. 45s.; 142 miles, 1d. 5h. 12m. 41s.; 143 miles, 1d. 5h. 25m. 14s.; 144 miles, 1d. 5h. 37m. 37s.; 145 miles, 1d. 5h. 49m. 49s.; 146 miles, 1d. 6h. 3m. 15s.; 147 miles, 1d. 6h. 17m. 40s.; 148 miles, 1d. 6h. 30m. 38s.; 149 miles, 1d. 6h. 45m. 50s.; 150 miles, 1d. 6h. 59m. 55s.; 151 miles, 1d. 7h. 12m. 55s.; 152 miles, 1d. 7h. 28m. 2s.; 153 miles, 1d. 8h. 8m. 20s.; 154 miles, 1d. 8h. 24m. 55s.; 155 miles, 1d. 8h. 38m. 35s.; 156 miles, 1d. 8h. 51m. 38s.; 157 miles, 1d. 9h. 3m. 20s.; 158 miles, 1d. 9h. 17m. 41s.; 159 miles, 1d. 9h. 31m. 50s.; 160 miles, 1d. 9h. 46m. 56s.; 161 miles, 1d. 10h. 1m. 50s.; 162 miles, 1d. 10h. 34m. 10s.; 163 miles, 1d. 10h. 49m. 11s.; 164 miles, 1d. 11h. 1m. 15s.; 165 miles, 1d. 11h. 16m. 25s.; 166 miles, 1d. 12h. 18m. 50s.; 167 miles, 1d. 12h. 32m. 19s.; 168 miles, 1d. 12h. 45m. 40s.; 169 miles, 1d. 13h. 29m. 40s.; 170 miles, 1d. 13h. 42m. 55s.; 171 miles, 1d. 13h. 55m. 4s.; and 172 miles, 1d. 14h. 13m. 20s.

[9] O'Leary, of Chicago, in a celebrated six-days' walk with E. P. Weston, Providence, Rhode Island, U.S.A., at the Agricultural Hall, April 2 to April 7, 1877, after a very interesting contest, defeated his opponent, and accomplished many fastest times on record. Among them were the distances between 174 miles and 226 miles inclusive. He walked 175 miles in 1d. 15h. 26m. 9s.; 176 miles, 1d. 15h. 39m. 0s.; 177 miles, 1d. 15h. 51m. 50s.; 178 miles, 1d. 16h. 4m. 28s.; 179 miles, 1d. 16h. 17m. 14s.; 180 miles, 1d. 16h. 30m. 26s.; 181 miles, 1d. 16h. 43m. 43s.; 182 miles, 1d. 17h. 20m. 15s.; 183 miles, 1d. 17h. 35m. 6s.; 184 miles, 1d. 17h. 45m. 53s.; 185 miles, 1d. 17h. 58m. 53s.; 186 miles, 1d. 18h. 11m. 6s.; 187 miles, 1d. 18h. 24m. 38s.; 188 miles, 1d. 18h. 36m. 49s.; 189 miles, 1d. 18h. 53m. 15s.; 190 miles, 1d. 19h. 6m. 20s.; 191 miles, 1d. 19h. 19m. 32s.; 192 miles, 1d. 19h. 32m. 28s.; 193 miles, 1d. 19h. 44m. 59s.; 194 miles, 1d. 19h. 57m. 27s.; 195 miles, 1d. 20h. 9m. 41s.; 196 miles, 1d. 20h. 21m. 41s.; 197 miles, 1d. 20h. 34m. 7s.; 198 miles, 1d. 20h. 56m. 55s.; 199 miles, 1d. 21h. 9m. 16s.; 200 miles, 1d. 21h. 21m. 33s.; 201 miles, 1d. 21h. 34m. 20s.; 202 miles, 1d. 21h. 47m. 34s.; 203 miles, 1d. 22h. 0m. 26s.; 204 miles, 1d. 22h. 13m. 19s.; 205 miles, 1d. 22h. 26m. 33s.; 206 miles, 1d. 22h. 39m. 52s.; 207 miles, 1d. 22h. 52m. 55s.; 208 miles, 1d. 23h. 6m. 54s.; 209 miles, 2d. 0h. 39m. 44s.; 210 miles, 2d. 0h. 53m. 18s.; 211 miles, 2d. 1h. 7m. 6s.; 212 miles, 2d. 1h. 21m. 16s.; 213 miles, 2d. 1h. 35m. 57s.; 214 miles, 2d. 1h. 50m. 16s.; 215 miles, 2d. 2h. 4m. 43s.; 216 miles, 2d. 2h. 19m. 46s.; 217 miles, 2d. 2h. 35m. 1s.; 218 miles, 2d. 2h. 49m. 16s.; 219 miles, 2d. 3h. 3m. 37s.; 220 miles, 2d. 3h. 18m. 25s.; 221 miles, 2d. 3h. 46m. 55s.; 222 miles, 2d. 4h. 1m. 40s.; 223 miles, 2d. 4h. 16m. 0s.; 224 miles, 2d. 4h. 31m. 0s.; and 225 miles, 2d. 4h. 45m. 22s.

[10] D. O'Leary, at Pomona Gardens, Manchester, in a seventy-three hours' match against Crossland, on March 1 and following days, 1877, walked 227 to 241 miles in the fastest times on record. His 228 miles he walked in 2d. 5h. 54m. 10s. 229 miles, 2d. 6h. 6m. 30s.; 230 miles, 2d. 6h. 18m. 56s.; 231 miles, 2d. 6h. 30m. 20s.; 232 miles, 2d. 6h. 44m. 45s.; 233 miles, 2d. 7h. 3m. 14s.; 234 miles, 2d. 7h. 16m. 0s.; 235 miles, 2d. 7h. 28m. 55s.; 236 miles, 2d. 7h. 41m. 30s.; 237 miles, 2d. 7h. 54m. 25s.; 238 miles, 2d. 8h. 8m. 2s.; 239 miles, 2d. 8h. 21m. 53s.; and 240 miles, 2d. 8h. 35m. 21s.

[11] P. Crossland, in the match alluded to in Note 10, at Manchester, in March, 1877, when he defeated O'Leary after a hard fight, walked 242 to 287 in the best recorded times. He did 243 miles in 2d. 9h. 17m. 12s.; 244 miles, 2d. 9h. 29m. 57s.; 245 miles, 2d. 9h. 42m. 25s.; 246 miles, 2d. 9h. 55m. 35s.; 247 miles, 2d. 10h. 7m. 55s.; 248 miles, 2d. 10h. 20m. 23s.; 249 miles, 2d. 10h. 38m. 35s.; 250 miles, 2d. 10h. 53m. 5s.; 251 miles, 2d. 11h. 6m. 59s.; 252 miles, 2d. 11h. 24m. 23s.; 253 miles, 2d. 11h. 51m. 25s.; 254 miles, 2d. 12h. 4m. 55s.; 255 miles, 2d. 12h. 17m. 45s.; 256 miles, 2d. 12h. 30m. 40s.; 257 miles, 2d. 12h. 43m. 10s.; 258 miles, 2d. 12h. 58m. 5s.; 259 miles, 2d. 13h. 13m. 15s.; 260 miles, 2d. 13h. 26m. 35s.; 261 miles,

2d. 13h. 39m. 30s.; 262 miles, 2d. 13h, 51m. 47s.; 263 miles, 2d. 14h. 4m. 11s.; 264 miles, 2d. 14h. 16m. 3s.; 265 miles, 2d. 14h. 32m. 13s.; 266 miles, 2d. 14h. 43m. 38s.; 267 miles, 2d. 14h. 58m. 13s.; 268 miles, 2d. 15h. 15m. 30s.; 269 miles, 2d. 15h 35m. 23s.; 270 miles, 2d. 16h. 19m. 15s.; 271 miles, 2d. 16h. 33m. 33s.; 272 miles, 2d. 16h. 47m. 35s.; 273 miles, 2d. 17h. 30m. 5s ; 274 miles, 2d. 17h. 43m. 40s ; 275 miles, 2d. 17h. 55m. 17s.; 276 miles, 2d. 18h. 11m. 31s.; 277 miles, 2d. 18h. 26m. 54s.; 278 miles, 2d. 18h. 43m. 17s.; 279 miles, 2d. 19h. 1m. 27s.; 280 miles, 2d. 19h. 17m. 43s.; 281 miles, 2d. 19h. 55m. 0s.; 282 miles, 2d. 20h. 11m. 5s.; 283 miles, 2d. 20h. 25m. 57s.; 284 miles, 2d. 20h. 40m. 19s.; 285 miles, 2d. 20h. 55m 10s.; and 286 miles, 2d. 21h. 9m. 35s.

[12] In the match alluded to in Note 9, O'Leary, in addition to the fastest times there mentioned, walked from 288 to 519 miles in the quickest time on record. The entire distance which he covered in the six days was 519 miles, 1,585 yards, in 5d. 21h. 29m. 50s. He did 289 miles in 2d. 22h. 36m. 0s.; 290 miles, 2d. 22h. 49m. 32s.; 291 miles, 2d. 23h. 11m. 48s.; 292 miles, 2d. 23h 25m. 32s.; 293 miles, 2d. 23h. 39m. 52s.; 294 miles, 2d. 23h. 54m. 9s.; 295 miles, 3d. 1h. 46m. 25s.; 296 miles, 3d. 2h. 2m. 45s.; 297 miles, 3d. 2h. 17m. 33s.; 298 miles, 3d. 2h. 39m. 0s.; 299 miles, 3d. 2h. 53m. 7s.; 300 miles, 3d. 3h. 7m. 29.; 301 miles, 3d. 3h. 29m. 0s.; 302 miles, 3d. 3h. 36m. 40s.; 303 miles, 3d. 3h. 53m. 11s.; 304 miles, 3d. 4h. 7m. 17s.; 305 miles, 3d. 4h. 21m. 39s.; 306 miles, 3d. 4h. 36m. 17s.; 307 miles, 3d. 4h. 50m. 20s.; 308 miles, 3d. 5h. 5m. 43s.; 309 miles, 3d. 5h. 20m. 3s.; 310 miles, 3d. 5h. 40m. 18s.; 311 miles, 3d. 5h. 54m. 5s.; 312 miles, 3d. 6h. 8m. 10s.; 313 miles, 3d. 6h. 22m. 0s.; 314 miles, 3d. 6h. 35m. 46s.; 315 miles, 3d. 6h. 49m. 49s.; 316 miles, 3d. 7h. 3m. 32s.; 317 miles, 3d. 7h. 24m. 40s.; 318 miles, 3d. 7h. 38m. 13s.; 319 miles, 3d. 7h. 53m. 10s.; 320 miles, 3d. 8h. 7m. 10s.; 321 miles, 3d. 8h. 20m. 58s.; 322 miles, 3d. 8h. 34m. 46s.; 323 miles, 3d. 8h. 48m. 43s.; 324 miles, 3d. 9h. 2m. 23s.; 325 miles, 3d. 9h. 20m. 25s.; 326 miles, 3d. 9h. 32m. 35s.; 327 miles, 3d. 9h. 46m. 46s.; 328 miles, 3d. 10h. 0m. 50s.; 329 miles, 3d. 10h. 14m. 16s.; 330 miles, 3d. 10h. 28m. 41s.; 331 miles, 3d. 10h. 41m. 34s.; 332 miles, 3d. 10h. 55m. 26s.; 333 miles, 3d. 11h. 10m. 18s.; 334 miles, 3d. 11h. 30m. 15s.; 335 miles, 3d. 11h. 44m. 54s.; 336 miles, 3d. 12h. 3m. 41s.; 337 miles, 3d. 12h. 17m. 45s.; 338 miles, 3d. 12h. 32m. 5s.; 339 miles, 3d. 12h. 47m. 2s.; 340 miles, 3d. 17h. 8m. 18s.; 341 miles, 3d. 17h. 20m. 28s.; 342 miles, 3d. 17h. 32m. 23s.; 343 miles, 3d. 17h. 44m. 9s.; 344 miles, 3d. 17h. 56m. 1s.; 345 miles, 3d. 18h. 7m. 48s.; 346 miles, 3d. 18h. 20m. 8s.; 347 miles, 3d. 18h. 33m. 8s.; 348 miles, 3d. 18h. 45m. 48s.; 349 miles, 3d. 18h. 58m. 38s.; 350 miles, 3d. 19h. 12m. 3s.; 351 miles, d. 19h. 25m. 19s.; 352 miles, 3d. 19h. 38m. 36s.; 353 miles, 3d. 19h. 5 m. 18s.; 354 miles, 3d. 20h. 7m. 15s.; 355 miles, 3d. 20h. 20m. 14s.; 356 miles, 3d. 20h. 33m. 11s.; 357 miles, 3d. 20h. 45m. 58s.; 358 miles, 3d. 20h. 59m. 12s.; 359 miles, 3d. 21h. 12m. 21s.; 360 miles, 3d. 21h. 25m. 55s.; 361 miles, 3d. 21h. 50m. 35s.; 362 miles, 3d. 22h. 3m. 52s.; 363 miles, 3d. 22h. 17m. 15s.; 364 miles, 3d. 22h. 29m. 58s.; 365 miles, 3d. 22h. 44m. 27s.; 366 miles, 3d. 22h. 58m. 50s.; 367 miles, 3d. 23h. 12m. 48s.; 368 miles, 3d. 23h. 26m. 28s.; 369 miles, 3d. 23h. 40m. 25s.; 370 miles, 3d. 23h. 53m. 51s.; 371 miles, 4d. 0h. 9m. 25s.; 372 miles, 4d. 0h. 23m. 39s.; 373 miles, 4d. 0h. 38m. 0s.; 374 miles, 4d. 0h. 52m. 1s.; 375 miles, 4d. 1h. 7m. 10s.; 376 miles, 4d. 1h. 21m. 4s.; 377 miles, 4d. 1h. 35m. 47s.; 378 miles, 4d. 1h. 50m. 0s.; 379 miles, 4d. 2h. 5m. 0s.; 380 miles, 4d. 2h. 19m. 40s.; 381 miles, 4d. 4h. 57m. 15s.; 382 miles, 4d. 5h. 10m. 19s.; 383 miles, 4d. 5h. 23m. 52s.; 384 miles, 4d. 5h. 37m. 30s ; 385 miles, 4d 5h. 50m. 40s.; 386 miles, 4d. 6h. 4m. 15s.; 387 miles, 4d. 6h. 18m. 5s.; 388 miles, 4d. 6h. 31m. 55s.; 389 miles, 4d. 6h. 46m. 0s.; 390 miles, 4d. 6h. 59m. 57s.; 391 miles, 4d. 7h. 17m. 0s.; 392 miles, 4d. 7h. 31m. 40s.; 393 miles, 4d. 7h. 45m. 27s.; 394 miles, 4d. 7h. 59m. 9s.; 395 miles, 4d. 8h. 13m. 16s.; 396 miles, 4d. 8h. 27m. 13s.; 397 miles, 4d. 8h. 41m. 0s.; 398 miles, 4d. 8h. 55m. 1s.; 399 miles, 4d. 9h 9m. 8s.; 400 miles, 4d. 9h. 23m. 30s.; 401 miles, 4d. 10h. 22m. 51s.; 402 miles, 4d. 10h. 36m. 25s.; 403 miles, 4d. 10h. 49m. 50s.; 404 miles, 4d. 11h. 3m. 10s.; 405 miles, 4d. 11h. 14m. 46s.; 406 miles, 4d. 11h. 30m. 15s.; 407 miles, 4d. 11h. 43m. 55s.; 408 miles, 4d. 11h. 57m. 40s.; 409 miles, 4d. 12h. 11m. 38s.; 410 miles, 4d. 12h. 25m. 55s.; 411 miles, 4d. 12h. 43m. 2s.; 412 miles, 4d. 12h. 57m. 7s.; 413 miles, 4d. 13h. 10m. 52s.; 414 miles, 4d. 13h. 24m. 45s.; 415 miles, 4d. 13h. 38m. 46s.; 416 miles, 4d. 13h. 52m. 32s.; 417 miles, 4d. 14h. 11m. 31s.; 418 miles, 4d. 14h. 24m. 59s.; 419 miles, 4d. 14h. 49m. 30s.; 420 miles, 4d. 15h. 3m. 3s.; 421 miles, 4d. 15h. 16m. 50s.; 422 miles, 4d. 15h. 30m. 42s.; 423 miles, 4d. 15h. 44m. 35s.; 424 miles, 4d. 15h. 58m. 33s.; 425 miles, 4d. 16h. 12m. 47s.; 426 miles, 4d. 16h. 26m. 32s.; 427 miles, 4d. 16h. 40m. 10s.; 428 miles, 4d. 17h. 6m. 6s.; 429 miles, 4d. 17h. 20m. 29s.; 430 miles, 4d 17h. 34m. 24s.; 431 miles, 4d. 17h. 48m. 18s.; 432 miles, 4d. 18h. 2m. 6s.; 433 miles, 4d. 18h. 16m. 21s.; 434 miles, 4d. 18h. 31m. 49s.; 435 miles, 4d. 19h. 23m. 8s.; 436 miles, 4d. 19h. 36m. 50s.; 437 miles, 4d. 19h. 50m. 38s.; 438 miles, 4d. 20h. 4m. 34s.; 439 miles, 4d. 20h. 18m. 17s.; 440 miles, 4d. 20h. 31m. 47s.; 441 miles, 4d. 20h. 45m. 35s.; 442 miles, 4d. 20h. 59m. 10s.; 443 miles, 4d. 21h. 12m. 24s.; 444 miles, 4d. 21h. 25m. 41s.; 445 miles, 4d. 21h. 38m. 59s.; 446 miles, 4d. 21h. 54m. 43s.; 447 miles, 4d. 22h. 9m. 30s.; 448 miles, 4d. 22h. 25m. 36s.; 449 miles, 4d. 22h. 40m. 10s.; 450 miles, 4d. 22h. 54m. 41s.; 451 miles, 4d. 23h. 19m. 5s.; 452 miles, 4d. 23h. 35m. 10s.; 453 miles, 4d. 23h. 50m. 0s.; 454 miles, 5d. 0h. 12m. 0s.; 455 miles, 5d. 0h. 27m. 10s.; 456 miles, 5d. 0h. 41m. 45s.; 457 miles, 5d. 0h.56m. 37s.; 458 miles, 5d. 1h. 11m. 5s.; 459 miles, 5d. 1h. 26m. 0s.; 460 miles, 5d. 1h. 41m 7s.; 461 miles, 5d. 1h. 56m. 20s.; 462 miles, 5d. 2h. 10m. 48s.; 463 miles, 5d. 2h. 25m. 29s.; 464 miles, 5d. 2h. 40m. 32s.; 465 miles, 5d. 2h. 55m. 45s.; 466 miles, 5d. 3h. 11m. 20s ; 467 miles, 5d. 3h. 27m. 30s.; 468 miles, 5d. 3h. 44m. 2s.; 469 miles, 5d. 4h. 1m. 4 s.; 470 miles, 5d. 4h. 17m. 40s.; 471 miles, 5d. 4h. 35m. 27s.; 472 miles, 5d. 4h. 52m. 0s.; 473 miles, 5d. 5h 7m. 42s.; 474 miles, 5d. 5h. 23m. 25s.; 475 miles, 5d. 8h. 48m. 12s.; 476 miles, 5d. 9h. 2m. 36s.; 477 miles, 5d. 9h. 16m. 21s.; 478 miles, 5d. 9h. 29m. 27s.; 479 miles, 5d. 9h. 42m. 32s.; 480 miles, 5d. 9h. 55m. 9s.; 481 miles, 5d. 10h. 12m. 16s.; 482 miles, 5d. 10h. 25m. 5s.; 483 miles, 5d. 10h. 38m. 20s.; 484 miles, 5d. 10h. 51m. 25s.; 485 miles, 5d. 11h. 5m. 17s.; 486 miles, 5d. 11h. 19m. 20s.; 487 miles, 5d. 11h. 33m. 33s.; 488 miles, 5d. 11h. 47m. 15s.; 489 miles, 5d. 12h. 1m. 13s.; 490 miles, 5d. 12s. 15m. 4s.; 491 miles, 5d. 12h. 29m. 19s.; 492 miles, 5d. 12h. 43m. 37s.; 493 miles, 5d. 13h. 57m. 55s.; 494 miles, 5d. 13h. 12m. 8s.; 495 miles, 5d. 13h. 26m. 18s.; 496 miles, 5d. 13h. 41m. 4s.; 497 miles, 5d. 13h. 55m. 28s.; 498 miles, 5d. 14h. 13m. 45s.; 599 miles, 5d. 14h. 28m. 46s.; 500 miles, 5d. 14h. 43m. 20s.; 501 miles, 5d. 15h. 8m. 13s.; 502 miles, 5d. 15h. 24m. 27s.; 503 miles, 5d. 15h. 40m. 21s.; 504 miles, 5d. 16h. 31m. 7s.; 505 miles, 5d. 16h. 45m. 22s ; 506 miles, 5d. 17h 0m. 0s.; 507 miles, 5d. 17h. 16m. 49s.; 508 miles, 5d. 17h. 31m. 30s.; 509 miles, 5d 17h. 47m. 4s.; 510 miles, 5d 18h. 2m 48s ; 511 miles, 5d. 18h. 18m 35s.; 512 miles, 5d. 18h. 34m. 15s.; 513 miles, 5d. 18h. 50m. 20s ; 514 miles, 5d. 19h 6m. 30s.; 515 miles, 5d. 19h. 23m. 7s ; 516 miles, 5d. 19h. 39m. 30s.; 517 miles, 5d. 19h. 56m. 17s.; 518 miles, 5d. 20h. 13m. 6s.; 519 miles, 5d. 20h. 29m. 50s.

Sect. 3.—Amateur Running.

Distance.	Time.	Name.	Age.	Weight.	Height.	Date and Place.	Timekeepers.
	H. M. S.			st. lb.	ft. in.		
180 yards.	0 0 18½	L. Junker,[1] L.A.C.				April 27, 1878, Stamford Bridge, Fulham.	R. Rogers.
200 yards.	0 0 20⅞	J. Shearman,[2] L.A.C.				June 2, 1877, Lillie Bridge.	J. Jenn.
220 yards.	0 0 22⅜	F. T. Elborough,[3] L.A.C.	24	11 1½	5 10½	Oct. 7, 1876, Lillie Bridge.	T. Griffith, *Bell's Life.*
250 yards.	0 0 27½	R. W. Vidal,[4] O.U.A.C.	22	11 0	5 10	Dec. 8, 1865, Cowley Marsh, Oxford.	J. H. Turner, *Bell's Life.*
300 yards.	0 0 31⅛	F. T. Elborough,[5] L.A.C.	23	11 1½	5 10½	Nov. 17 1875, Cambridge.	B. Nix.
Quarter mile.	0 0 50⅜	E. J. Colbeck,[6] L.A.C.	20	12 4	5 11¾	June 20, 1868, Walham Green.	C. Westhall, *Bell's Life.*
	0 0 50⅞	J. Shearman,[7] L.A.C.				June 7, 1877, Lillie Bridge.	J. Watson.
600 yards.	0 1 14⅜	F. T. Elborough,[8] L.A.C.	25	11 1½	5 10½	April 28, 1877, Stamford Bridge.	T. Griffith, of *Bell's Life*
Half mile.	0 1 57½	Ditto.[9]	,,	,,	,,	Oct. 7, 1876, Lillie Bridge.	T. Griffith, *Bell's Life.*
1000 yards.	0 2 20⅝	C. Hazen Wood,[10] L.A.C.				July 28, 1877, Birmingham.	,,
Three-quarter mile.	0 3 14⅜	W. Slade,[11] L.A.C.	23	11 2	5 11¾	March 26, 1877, Lillie Bridge.	R. Rogers.
1 mile.	0 4 24½	Ditto.[12]	21	,,	,,	June 19, 1875, Lillie Bridge.	T. Griffith, *Bell's Life.*
1¼ miles.	0 6 8	Ditto.[13]	22	,,	,,	June 10, 1876, Belfast.	,,
1½ miles.	0 7 24	,,	,,	,,	,,	,,	,,
1¾ miles.	0 8 40	,,	,,	,,	,,	,,	,,
2 miles.	0 9 42	,,	,,	,,	,,	,,	,,
3 miles.	0 14 46	J. Gibb,[14] L.A.C.				March 3, 1877, Cambridge.	E. R. J. Nicholls, O.U.A.C., and A. R. Lucas, Corpus Christi.
4 miles.	0 20 22	W. Slade,[15] L.A.C.	20	11 0	,,	April 26, 1875, Lillie Bridge.	J. Vandy, *Bell's Life.*
5 miles.	0 26 24⅕	J. Gibb,[16] L.A.C.				Nov. 3, 1877, Stamford Bridge.	F. Gale, *Sportsman.*
6 miles.	0 32 7	Ditto.[17]				Nov. 7, 1877, Stamford Bridge.	G. W. Atkinson, *Sporting Life.*
7 miles.	0 37 46	,,	,,	,,	,,	,,	,,
8 miles.	0 43 30	,,	,,	,,	,,	,,	,,
9 miles.	0 49 15	,,	,,	,,	,,	,,	,,
10 miles.	0 54 49	,,	,,	,,	,,	,,	,,
12 miles.	1 8 22	S. F. Weall,[18] L.A.C.	19	9 1	5 2½	Nov. 27, 1873, Harrow and Pinner road.	J. Churchill, E. Pope, and W. White.
14 miles.	1 21 18	,,	,,	,,	,,	,,	
16 miles.	1 36 0	,,	,,	,,	,,	,,	
18 miles.	1 50 0						
36 miles.	6 0 0	Capt. R. B. Allardice, 23 Fusiliers.[19]	28	—	5 10½	Oct. 12, 1807, Newmarket.	
67 miles.	13 0 0	Ditto.[20]	21	—	,,	Spring of 1801, Angus, Sutherland.	
90 miles.	20 22 4	Ditto.[21]	22	—	,,	Nov. 10, 1801, York and Hull road.	
Ball gathering (50 balls) 1 mile 3furlongs 130 yards	0 9 23⅕	J. Shaw,[22] Rowarth.	,,	—	—	Aug. 10, 1874, Denton, Manchester.	W. Platt, *Bell's Life.*
Ball gathering (50 balls) 7furlongs 150 yards	0 13 15	T. R. Pakenham,[23] Cheltenham College.	17	9 13	5 6½	April 6, 1872, Cheltenham College.	W. R. Porcher, Cheltenham.

[1] Junker, a gentleman of Russian birth, won the 180yds. handicap from scratch at the first anniversary of the opening ground at Stamford Bridge, Fulham, on April 27, 1878. This is the first record at the distance.

[2] J. Shearman, in the 200yds. Strangers' Handicap at the Civil Service meeting, Lillie Bridge, June 2, 1877, won his heat from scratch by three-quarters of a yard from A. Powles, 1yd. Shearman was defeated in the final heat by J. G. Wylie, 13yds., and H. Crossley, 3yds.

[3] Elborough, at Lillie Bridge, at the L.A.C. meeting, in the 220yds. Challenge Cup, beat Powles easily, the latter pulling up 20yds. from the post.

[4] Vidal won by 6yds. in Oriel College Strangers' Race, in the Balliol College Cricket Ground, Cowley Marsh, Oxford, defeating D. Morgan, E. W. Tritton, and C. N. Jackson, all O.U.A.C. The ground was very heavy.

[5] In the first heat of the Strangers' 300yds. Handicap at St. John's College, which he won from scratch.

[6] Amateur Championship Race on the Beaufort House Ground, Walham Green. Colbeck fell badly against a sheep, whereon *Bell's Life* remarked, "had the accident not occurred, there is not the slightest doubt 50s. would have been beaten." He defeated W. Maclaren, Manchester A.C., and A. J. Chinnery L.A.C.

[7] Shearman, in a quarter-mile Non-champion Race in connection with the A.A.C., at Lillie Bridge, on June 7, 1877, defeated H. H. Sturt by two yards and a half, and tied the previous fastest on record.

[8] Elborough, at the opening L.A.C. meeting at Stamford Bridge Ground, won the 600yds. Challenge Cup Members' Handicap by half a foot from H. M. Oliver, 40 yards.

[9] Elborough, at Lillie Bridge, at the L.A.C. meeting, won the Half-mile Challenge Cup by 4yds. from Hill.

[10] Hazen Wood, at the Birmingham Athletic Club meeting, in the 1,000yds. open race, beat W. H. Edwards B.A.C., and F. T. Elborough L.A.C., by 4yds.

[11] Slade, in the Amateur Championship Mile Race, walked over. He was companioned by H. O. Moore for the first half mile, who took him along at such a pace that he covered three-quarters of a mile in the best time on record.

[12] Slade won the L.A.C. One-mile Challenge Cup Race, defeating H. A. Bryden, L. V. Burt, and T. R. Hewitt. ¼-mile, 60s.; ½-mile, 2m 4s.

[13] Slade, at the North of Ireland meeting in the Ormeau Ground (Grass Course), in a two-miles Handicap, came in third starting from scratch; and did the mile and a quarter to the two miles in the fastest time on record.

[14] Gibb, in a three-miles handicap at Cambridge University, had second place from scratch to C. B. King (St. John's), 400 yards start, did the fastest time on record for three miles.

[15] Slade, in a four-miles match, defeated J. Gibb L.A.C. by thirty yards. 1 mile, 4m. 49s.; 2 miles, 10m. 4s.; 3 miles, 15m. 21s. Weather very fine.

[16] Gibb, at an L.A.C. meeting at Stamford Bridge, in a five-miles handicap, started from scratch and won by three-quarters of a yard from W. M. Colson, who had 1m. 45s. start. Fourteen ran.

[17] Gibb, in a ten-miles Challenge Cup Race, at an L.A.C. meeting, defeated P. H. Stenning, W. A. Tyler, and W. E. Fuller, by 2m. 21s.

[18] These times for twelve, fourteen, sixteen, and eighteen miles were made by Weall, in a match to run twenty miles in 2½ hours, over a measured mile on the Harrow and Pinner road, which he failed to do owing to the bad state of the ground.

[19] Capt. Allardice made this time over a measured mile on the London and Cambridge road, at Newmarket, in a match for 1000gs. with A. Wood, Lancashire, as to who could run the greatest distance in 24 hours, Wood giving 20 miles at the finish. Wood ran 40 miles in 6h. 20m., and then gave up, so Capt. Allardice was not required to proceed.

[20] Capt. Allardice ran this distance over a measured mile on the Brechin and Forfar road, Angusshire, Scotland, in a match against time to run 90 miles in 21½ hours, for 2000gs. He was knocked up at the end of 67 miles, and gave in.

[21] Capt. Allardice won by 1h. 7m. 56s. a match against time to run 90 miles in 21¼ hours for 5000gs. 2 miles, 25m. 10s.; 31 miles, 7h.; 50 miles, 11h. The match was run over a measured mile sixteen miles from York, on the Hull road. The time was taken by six stop-watches, which were compared and then sealed up in a box until the end of the match.

[22] Shaw won by one ball at the Denton Sports on the Aston-road Cricket Ground, beating G. Burdekin, Mellor, A. Taylor, Hyde, W. Grindley, Nottingham; and J. Stopford, Denton. The conditions were that 50 balls were to be picked up and deposited in a basket, the first ball being one yard from the basket, and the balls a yard apart.

[23] Pakenham won at Cheltenham College Sports, on the College Cricket Ground, beating — Drinkwater, A. Manning, and — Julian. The conditions were to pick up and deposit 50 balls in a basket, the first ball being ten yards from the basket, and each ball a yard apart.

Sect. 4.—Professional Running.

Distance.	Time.	Name.	Age.	Weight.	Height.	Date and Place.	Time-keepers.
	H. M. S.			st. lb.	ft. in.		
100 yards.	0 0 9½	G. Seward,[1] Newhaven, Connecticut	27	10 9	5 7	Sept. 30, 1844, Hammersmith.	J. Howitt, Norwich.
120 yards.	0 0 11¼	Ditto.[2]	29	,,	,,	May 3, 1847, Ealing.	E. Smith of *Bell's Life.*
130 yards.	0 0 12⅔	J. Barber,[3] Attercliffe.	21	10 7	5 6½	April 7, 1874, Sheffield.	J. Vandy of *Bell's Life.*
140 yards.	0 0 14	W. G. Scarlet,[4] Newcastle-on-Tyne	32	9 2	5 7½	Sept. 7, 1841, Newcastle on-Tyne.	J. D. Parrott, Newcastle.
150 yards.	0 0 15	C. Westhall.[5]	28	9 12	5 10	Feb. 4, 1851, Manchester.	J. Roberts, West London Ground.
200 yards.	0 0 19½	G. Seward,[6] Connecticut.	29	10 9	5 7	March 22, 1847, Barnet.	E. Smith of *Bell's Life.*
300 yards.	0 0 31½	J. Nuttall,[7] Manchester.	21	10 4	5 8	April 27, 1863, Manchester.	G. Martin and W. Price.
350 yards.	0 0 40	G. Walsh,[8] Royton.	28	10 7	5 0	April 13, 1872, Manchester.	J. Cooper, Manchester.
400 yards.	0 0 45	T. Brian,[9] Bradford, Yorks.	20	8 8	—	Feb. 28, 1841, Doncaster.	J. Holden, Sen. Manchester.
Quarter mile.	0 0 48¼	R. Buttery,[10] Sheffield.	29	11 8	5 9½	Oct. 4, 1873, Gateshead-on-Tyne.	W. Oldham.
500 yards.	0 1 0¾	G. Walsh,[11] Royton.	30	10 7	5 6½	May 23, 1874, Manchester.	J. Holden, Manchester.
600 yards.	0 1 13	J. Nuttall,[12] Manchester.	22	10 4	5 8	Feb. 20, 1864, Manchester.	G. Hardy, Manchester.
700 yards.	0 1 29	J. Pudney,[13] Mile End.	26	8 5	5 6½	April 7, 1856. Slough, Bucks.	W. Price, Hackney Wick.
800 yards.	0 1 50	W. Jackson,[14] Stockton-on-Tees.	22	11 6	5 11	Nov. 2, 1826, Epsom Race Course.	R. Burn, Darlington.
Half mile.	0 1 53½	F. Hewitt,[15] Millwall.	27	10 0	5 8¾	Sept. 17, 1871, on Riccarton Road, Lyttelton, Australia.	H. Cowen, A. Redwood, and — Smith.
1000 yards.	0 2 19¾	J. Nuttall,[16] Manchester.	30	10 4	5 8	Jan. 13, 1872, Manchester.	G. Haslam, Manchester.
Three-qurtr mile.	0 3 7	W. Richards,[17] Millwall.	27	10 5	5 8½	June 30, 1866, Manchester.	G. Hardy, Manchester.
1 mile.	0 4 17½	W. Richards,[18] / W. Lang.[18]	26 / 26	10 6 / 9 10	5 8½ / 5 8	August 19, 1865, Manchester.	G. Martin.
1¼ miles.	0 5 36	W. Lang,[19] Middlesborough.	24	9 10	5 8	July 18, 1863, Manchester.	J. Holden, Manchester.
1½ miles.	0 6 50	J. Fleet,[20] Manchester.	21	8 4	5 4½	Feb. 23, 1867. Manchester.	J. Cooper, Manchester.
2 miles.	0 9 11½	W. Lang,[21] Middlesborough.	24	9 10	5 8	August 1, 1863, Manchester.	J. Holden, Manchester.
3 miles.	0 14 36	J. White,[22]	25	7 10	5 2½	May 11, 1863.	H. A. Reed,
4 miles.	0 19 36	Gateshead.	,,	,,	,,	Hackney Wick	London.
5 miles.	0 24 40	,,	,,	,,	,,	Ground.	
6 miles.	0 29 50	,,	,,	,,	,,	,,	,,
7 miles.	0 34 45	,,	,,	,,	,,	,,	,,
8 miles.	0 40 20	J. Howitt,[23]	31	7 8	5 2	June 1, 1852,	J. Garrat.
9 miles.	0 45 21	Norwich.	,,	,,	,,	Copenhagen Ground.	
10 miles.	0 51 26	L. Bennett,[24]	37	11 12	5 9	April 3, 1863,	G. Martin.
11 miles.	0 56 52	Indian Reservation	,,	,,	,,	West London	
12 miles.	1 2 2½	Cattarangus Co.	,,	,,	,,	Ground, Brompton.	
13 miles.	1 10 31	J. Howitt,[25]	31	7 8	5 2½	March 29, 1852,	E. Drinkwater,
14 miles.	1 16 12	Norwich.	,,	,,	,,	Copenhagen Ground,	Williamstown.
15 miles.	1 22 0	,,	,,	,,	,,	Islington.	
16 miles.	1 28 6	,,	,,	,,	,,	,,	,,
18 miles.	1 45 21	T. Maxfield,[26] Sheffield.	25	10 8	5 5	May 6, 1845, Slough, Bucks	T. Spring and — Dyson.
20 miles.	1 57 27	G. Hazael.[27]				Dec. 10, 1877, Lillie Bridge.	
27 miles.	3 0 0	G. Martin,[28] Maidstone.	36	9 1	5 6½	Sept. 22, 1863, Hertford Road.	J. Clark, Maidstone.
30 miles.	3 20 0	J. Rhodes,[29] Wolverhampton.	32	9 2	5 5½	Feb. 7, 1853, Aston Cross Ground,	C. Bolton of *Bell's Life.*
35 miles.	4 8 0	R. Manks.[29]	32	9 2	5 7	Birmingham.	,,
40 miles.	4 51 0	,,	,,	,,	,,	,,	,,
50 miles.	6 17 0	G. Martin.[28]	36	9 1	5 6½	Sept 22, 1863. (*Vide* above.)	J. Clark, Maidstone.
52 miles.	7 3 0	R. Manks.[29]	32	9 2	5 7	Feb. 7, 1853, (*Vide* above.)	C. Bolton of *Bell's Life.*

Further Details of Professional Running Performances.

[1] Seward, in this match, beat the late W. Robinson, Newton Moor, by 2yds., on the turnpike road, Seven Stars Inn, Hammersmith.

[2] Seward beat C. Westhall by 3yds. at Emmerson's Ground, Ealing.

[3] Barber, at Newhall Ground, Sheffield, won final heat of 210yds. handicap with 80yds. start, beating S. Boswell, Birmingham, 79yds.; C. Kitchen, Thorner, 75½yds.; and J. Warren, Southampton, 74½yds., by ½yd. Weather fine and clear, very strong favourable wind.

[4] Scarlet beat J. Gealy, of Berwick-on-Tweed, by 2½yds., on the North Turnpike road, Newcastle-on-Tyne.

[5] Westhall beat W. Hayes, of Ruddington, by 2½yds. on the Bellevue Ground, Manchester.

[6] Seward beat C. Westhall, by 2½yrds., on F. Kay's Ground, Gannick Corner, Barnet.

[7] Nuttall easily beat G. Beddow, London, in final heat of 300yds. sweepstakes, on the City Ground, Manchester.

[8] Walsh beat H. Whitehead, Hyde, by 3yds., on the Royal Oak Park Ground, Manchester.

[9] Brian beat the late G. Moore, Leicester, by 3yds., on the Doncaster Racecourse road.

[10] Buttery from scratch in ¼ mile handicap, on Gateshead Borough Ground, beat by 1yd. A. Peric, Kelso, 20yds.; P. Bridge, Blackburn, 19yds.; and R. Herdman, Shields, 23yds.

[11] Walsh, in first heat of 500yds. handicap, on the Royal Oak Park Ground, Manchester, wherein he started from scratch, beat by a foot, W. Baglin, London, 14yds.; A. Gamer, 45yds.; W. Howles, Newton Heath, 55yds.; and S. Hall, Clitheroe, 22yds. Weather fine.

[12] Nuttall beat S. Albison, Bowlee, by three-quarters of a yard, on the City Ground, Manchester, in a heavy snow-storm and driving wind.

[13] Pudney beat H. Magetts, Oxford, easily, on the turnpike road between Salt Hill and Burnham Lane, Slough.

[14] Jackson beat J. Wantling, Derby, by 10yds., in a race from Tattenham Corner to the judge's box, on Epsom Racecourse, after knocking down a man who impeded him close home.

[15] Hewitt won by 2½s. a match to run half a mile in less than 1m. 55¾s.; quarter mile, 51¾s. Nasty cross wind.

[16] Nuttall beat S. E. Ridley, Gateshead, by 2yds., on Royal Oak Park Ground, Manchester.

[17] Richards beat J. Nuttall, Manchester; R. Mackinstray, Glasgow; and S. Albison, Bowlee, on Royal Oak Park Ground, Manchester, during high wind and rain. Half mile time, 2m. 2s.

[18] Richards and Lang ran a dead heat on Royal Oak Park Ground, Manchester, beating R. Mackinstray, Glasgow; S. Albison, Bowlee; C. Mower, Dereham; P. Stapleton, Mossley; J. Sanderson, Whitworth; J. Nuttall and J. Neary, both Manchester; and E. Mills, London. Quarter of a mile, 60s.; half, 2m. 5½s.; three-quarters, 3m. 14s. Dead-heat run off Aug. 26, 1865, Lang winning by 20yds in 4m. 22s.

[19] Lang, on the City Ground, Manchester, easily beat J. White, Gateshead; P. Stapleton, Mossley; and S. Albison, Bowlee. One mile time, 4m. 29s.

[20] Fleet, on the Royal Oak Park Ground, Manchester, easily beat J. Neary of Manchester; W. Richards, Millwall; I. Hughes, Newton Heath; and R. Mackinstray, Glasgow.

[21] Lang, on the City Ground, Manchester, beat J. Sanderson, Whitworth, by 6yds. One mile time, 4m. 27s.

[22] White, in a 10-mile race, easily beat L. Bennett, Indian Reservation, Cattarangus County, Canada; W. Lang, Middlesborough; E. Mills, London; P. Stapleton, Mossley; J. Brighton, Norwich; S. Barker, Billingsgate; W. Richards, Millwall; and H. Andrews, Holborn. One mile time, 4m. 40s.; two, 9m. 39s.

[23] Howitt, on the Copenhagen Ground, Islington, beat J. Levett, Battersea, in a 10-mile race, Levett not finishing. 1 mile, 4m. 52s.; 2 miles, 9m. 54s.; 3 miles, 14m. 52s.; 4 miles, 19m. 56s.; 5 miles, 24m. 57s.; 6 miles, 30m. 4s.; 7 miles, 35m. 13s.

[24] These times were made in a 12-mile handicap, in which Bennett was scratchman. W. Lang, Middlesborough, who had 100yds. start, led by 30 at the end of 8 miles, and eventually won by half a yard only. 9 miles, 46m. 15s.

[25] Howitt made these times in a 20-mile race, won by J. Levett, Battersea. Howitt went to front at end of three miles, and led till end of the sixteenth, when lameness knocked him up. 1 mile, 5m. 10s.; 2 miles, 10m. 19s.; 3 miles, 15m. 36s.; 4 miles, 21m. 5s.; 5 miles, 26m. 28s.; 6 miles, 31m. 50s.; 7 miles, 37m. 15s.; 8 miles, 42m. 31s.; 9 miles, 47m. 52s.; 10 miles, 53m. 11s.; 11 miles, 59m. 20s.; 12 miles, 1h. 4m. 58s.

[26] Maxfield was matched to run 20 miles in two hours, which he accomplished over a measured mile on the turnpike road between Salt Hill and Burnham Lane, near Slough. 2 miles, 10m. 12s.; 4 miles, 21m. 5s.; 6 miles, 32m. 12s.; 8 miles, 43m. 34s.; 10 miles, 55m. 16s.; 12 miles, 1h. 7m. 22s.; 14 miles, 1h. 19m. 28s.

[27] Manks undertook to run 20 miles in 1h. 58m. 30s., which he accomplished. 1 mile, 4m. 40s.; 2 miles, 10m. 12s.; 3 miles, 15m. 43s.; 4 miles, 21m. 14s.; 5 miles, 27m. 2s.; 6 miles, 32m. 40s.; 7 miles, 38m. 22s.; 8 miles, 44m. 6s.; 9 miles, 49m. 53s.; 10 miles, 55m. 59s.; 11 miles, 1h. 1m. 55s.; 12 miles, 1h. 7m. 59s.; 13 miles, 1h. 14m. 7s.; 14 miles, 1h. 20m. 18s.; 15 miles, 1h. 26m. 48s.; 16 miles, 1h. 33m. 13s.; 17 miles, 1h. 39m. 42s.; 18 miles, 1h. 46m. 14s.; 19 miles, 1h. 52m. 51s.

[28] Martin was matched to run 50 miles in seven hours, on the London and Hertford road, which he did easily.

[29] Rhodes and Manks had a match at the Aston Cross Grounds, Birmingham, as to who could run the greatest distance in twelve hours. Rhodes gave up, beaten, at 44th mile. 10 miles, 58m.; 20 miles, 2h. 2m.

Greatest Distance Performance.

The greatest distance ever run in one hour is 11 miles 970 yards, by L. Bennett, Indian Reservation, Cattarangus County, Canada, in the 12-mile handicap quoted above.

Sect. 5.—Amateur Jumping.

Description of Contest.	Distance.	Name.	Age.	Weight	Height.	Date and Place.
	ft in.			st. lb.	ft. in.	
Running wide jump.	23 1½	J. Lane,[1] Dublin Univ. A.C.	22	11 2	5 8	June 11, 1874, Trin. Coll. Dublin.
Running high jump.	5 11	M. J. Brooks,[2] Oxford Univ. A.C.	19	11 5	6 0	March 30, 1874, Lillie Bridge Ground.
		N. G. Glazebrook,[3] Oxford Univ. A.C.	21	11 5	5 11½	March 22, 1875, Lillie Bridge Ground.
Running high pole jump.	10 7	J. E. Woodburn,[4] Ulverstone C.C.	22	10 0	5 8½	March 30, 1874, Lillie Bridge Ground.
		W. Kelsey, Hull A.C., and J. Wigful,[5] Sheffield, F.C.	22	10 0	5 8½	July 7, 1873, Bramhall Lane Ground, Sheffield.
			21	9 7	5 9	
Running hop, step, and jump.	41 11	H. L. Dick,[6] St. Andrew's Univ. A.C.	21	9 9	5 5¼	March 27, 1875, at Grange Cricket Ground, Edinburgh.
Standing wide jump (with artificial aid).	11 0	J. Duckworth,[7] Haslingden A.C.	24	11 2	5 11½	July 24, 1869, Bradford, Yorkshire.
Standing wide jump without artificial aid).	10 5	J. J. Tickle,[8] St. Helen's C.C.	22	12 4	5 10¾	Sept. 2, 1871, Leigh, Manchester.
Standing high jump.	4 10	F. Hargreaves, Haslingden A.C.;	21	10 7	5 7½	August 5, 1871, Pendlebury, Manchester.
		and E. Moore,[9] Burnley C.C.	25	12 3	5 9½	
Vaulting.	7 1½	J. H. S. Moxley,[10] Queen's College, Belfast.	30	10 11	5 10	June 27, 1874, Lansdowne Road Ground, Dublin.

Further Details of above-named Performances.

[1] Lane beat E. J. Davies, Cambridge University A.C. A strong wind and a slight incline favoured them. Judges: J. N. Gerrard, J. Trail, and J. D. La Touche, all Dublin University A.C.

[2] Brooks, at the Amateur Champion meeting, beat T. Davin, Irish Champion A.C., and J. Y. Watson, London A.C. Judges: Lieut.-Col. F. Hammersley, Amateur A.C., W. M. S. Dorrien, Oxford University A.C., and C. B. Lawes, Cambridge University A.C.

[3] Glazebrook jumped over for Amateur Championship. Judges: W. M. Chinnery, London A.C., and C. B. Lawes and P. M. Thornton, Cambridge University A.C. Weather fine.

[4] Woodburn at the Amateur Champion meeting, beat W. Kelsey, Hull A.C.; H. M. Fyffe, S. London Harriers; R. Sabin, Culworth A.C.; and J. B. Wooley, Crystal Palace A.C. Judges: Lieut.-Col. Hammersley, Amateur A.C., W. M. S. Dorrien, Oxford University A.C., and C. B. Lawes, Cambridge University A.C. Woodburn also cleared 10ft. 7in. at Lancaster sports, May 31, 1873.

[5] Kelsey and Wigful tied at the Sheffield Football Club sports. Judge, J. Foster.

[6] Dick won at the Edinburgh, Glasgow, and St. Andrews Universities' meeting, beating J. Smith, Edinburgh University A.C. Judges: Lord and — Reid.

[7] Duckworth won at the Bradford Old Cricket Club sports, beating J. R. Bateson, Bradford Old C.C.; D. R. Rhodes, Huddersfield A.C.; G. H. Bateman, Bradford; T. Moorhouse, Bingley; O. Scatchard, Leeds A.C.; and H. B. Spencer, Halifax A.C. Judge: H. F. Wilkinson, London A.C. Weather fine and hot.

[8] Tickle won at the Leigh Cricket Club sports, beating T. H. Stretch, Ormskirk C.C.; and R. Edge, Leigh C.C.

[9] At Pendlebury, Swinton, and Clifton sports, beating G. C. B. Cooper, Manchester Athenæum G.C. Judges: H. J. C. Turner, H. Parge, A. M. Blair, B. K. Turner, F. J. Maclaren, and H. Greig.

[10] At Irish Amateur Champion meeting beating G. Fitzgerald and H. S. Gabbett, both Dublin University A.C. Judges: Lord Lurgan, W. Baker, and T. Hampton.

Sect. 6.—Professional Jumping.

Description of Contest.	Distance. or Height	Name.	Age.	Weight.	Height.	Date and Place.
	ft. in.			st. lb.	ft. in.	
Running wide jump (with artificial aid).	29 7	J. Howard,[1] Bradford, Yorks.	28	10 10	5 8½	May 8, 1854, Chester Racecourse.
Running wide jump (without artificial aid).	20 5	S. Muir,[2] Stewartstown; and J. Young, Hawick.	—	—	—	Sept. 11, 1869, Duke of Buccleugh's Park, Thorniebank, Dalkeith.
Running high jump (with artificial aid).	6 0	F. Theobald,[3] of the Guards.	—	—	—	Sept. 1, 1851, Bayswater.
Running high jump (without artificial aid).	5 11	E. Vardy,[4] Alnwick.	—	—	—	August 27, 1859, Haydon Racecourse.
Running high pole jump.	10 9	D. Anderson,[5] Alnwick.	—	—	—	August 6, 1870, Bridge of Allan.
Running hop, step, and jump.	47 7	R Knox,[6] Newstead.	—	—	—	August, 1870, on Leith Links.
Standing wide jump (with artificial aid).	13 7	J. Greaves,[7] Hazlehurst.	25	10 0	5 8	Wood Park Ground, Bardsley.
Standing high jump.	4 9½	G. Tait,[8] Douglas.	—	—	—	August 15, 1868, Armiston.
Standing hop, step, and jump.	40 2	D. Anderson,[9] Alnwick.	—	—	—	July 24, 1865, Fort Eyemouth.

Further Details of above-named Performances.

[1] Howard won a match to clear 27ft. in one of six leaps. He accomplished it in his fourth. He took off from a block of wood 1ft. wide, 2ft. long, 3in. thick, and elevated 4in., and used dumb-bells of 5lb. each.

[2] Muir and Young tied at the Dalkeith games. Mr. J. Wilson, of Weston Cowdon, was judge. Muir also cleared a like distance at the same games on Aug. 29, 1868, beating R. Knox, Newstead, and another.

[3] Theobald, at the Flora Grounds, Bayswater, beat the late H. A. Reed, London, who only cleared 5ft. The take off was from a solid block of wood, with 6in. rise, and the height was measured from the top of the block.

[4] Vardy won at the Alnwick games, beating J. Edington, Alnwick, and J. Allan. Weather fine and dry.

[5] Allan won at the Strathallan games (in Col. Sir J. E. Alexander's park, Bridge of Allan, Scotland), beating W. Ewing and J. Morrison, both of Alloa.

[6] Knox won at the Leith games in the first week of August, 1870, beating J. Young, Hawick, and W. Murray.

[7] Greaves beat W. Brown of New York by three-quarters of an inch. He used 23lb. dumb-bells. E. Taylor of Bardsley was judge.

[8] Tait won at the Armiston and Vogue games, in the park of Mr. J. Christie, beating D. Anderson, Alnwick.

[9] Anderson won at Ayton, Coldingham, and Eyemouth games, beating seven others. Capt. Allen, Berwick Artillery Volunteers, was judge.

Sect. 7.—Amateur Hammer-Throwing and Putting the Weight.

Description of Contest.	Distance.	Name.	Age.	Weight.	Height.	Date and Place.
	ft. in.			st. lb.	ft. in.	
Throwing the 16lb. Hammer (run unlimited).	127 0	G. H. Hales,[1] Cambridge University A.C.	20	13 10	6 2¾	March 19, 1875, Lillie Bridge Ground, London.
Putting the 16lb. Weight (7ft. run and no follow).	42 5	E. J. Bor,[2] London A.C.	21	15 10	6 6	March 27, 1872, Lillie Bridge Ground, London.

Further Details of above-named Performances.

[1] Hales won at the Oxford *v.* Cambridge meeting, when he defeated J. D. Todd and S. S. Brown, both Oxford University A.C., and N. J. Littleton, Cambridge University A.C. Judges: J. H. Morgan, Oxford University A.C., and C. B. Lawes, Cambridge University A.C. Weather fine.

[2] Bor won at the Amateur Champion meeting, when he defeated W. F. P. Moore, Amateur A.C.; W. H. R. Domville, Oxford University A.C.; and N. J. Littleton, Cambridge University A.C.; Judges: Lieut.-Col. Hammersley, Amateur A.C., W. M. Chinnery, London A.C and C. B. Lawes, Cambridge University A.C.

SECT. 8.—AMATEUR HURDLE-RACING AND FOOT-STEEPLECHASING.

Description of Contest.	Time.	Name.	Age.	Weight.	Height.	Date and Place.
	H. M. S.			st. lb.	ft. in.	
Hurdle-race, 120yds., 10 flights.	0 0 16	C. N. Jackson,[1] Oxford University A.C.	19	10 7	5 10	Nov. 14, 1865, Cowley Cricket Ground, Oxford.
Thames short steeplechase, 4¼m. 11yds.	0 27 28	W. Slade,[2] London A.C.	20	11 0	5 11¾	May 20, 1874, Roehampton, Surrey.
Thames long steeplechase, nearly 8 miles.	0 45 0	J. Gibb,[3] London A.C.	21	9 0	5 6	Feb. 6, 1875, Roehampton, Surrey.
Rugby School Crick Run, about 13 miles.	1 17 21	C. W. L. Bulpett,[4] Rugby School.	18	10 12	5 9¾	Dec. 8, 1870, Rugby.

FURTHER DETAILS OF ABOVE-NAMED PERFORMANCES.

[1] Jackson made this time in the final heat of Magdalen Hall handicap, wherein he was scratchman, and defeated D. Morgan and L. E. Newnham, both at ten yards. Timekeeper, H. J. Turner, Oxford.

[2] Slade won by 70 yards, beating C. W. H. Dicker, J. E. Matthews, W. Harris, and A. E. Ball for Thames Hare and Hounds short steeplechase challenge cup. Course: hilly road, marsh land, hilly farm land, and open course. Weather fine and dry. Timekeeper, T. Griffith.

[3] Gibb won the Thames open steeplechase, No. 18, by 5 yards from scratch, beating P. H. Stenning, Cleveland F.C., 2m. start; C. Evitt, S. London Harriers, 2m.; A. E. Ball, Thames Hare and Hounds, 1m. 30s.; P. J. Fraser, Thames Hare and Hounds, 6m.; C. H. Mason, London A.C., 1m. 15s.; W. Ball, Thames Hare and Hounds, 3m.; W. A. F. Boulger, Thames Hare and Hounds, 1m. 45s.; W. M. Colson, S. London Harriers, 2m: W. E. Fuller, Thames Hare and Hounds, scratch; W. M. Green, Thames Hare and Hounds, 1m. 30s.; E. T. Sachs, Thames Hare and Hounds, 2m. 15s.; C. Martyn, Thames Hare and Hounds, 2m. 30s.; E. C. Otter, Thames Hare and Hounds, 2m. 30s.; A. O. Ward, Thames R.C., 4m. 30s.; J. D. Ball, Thames Hare and Hounds, 7m. 30s.; and R. Matthews, Thames Hare and Hounds, 10m. Course: an alternation of hilly road, rough broken common land, hilly farm-land, and level heath road, and 27 yards short of 8 miles. Going very heavy. Timekeeper, T. Griffith.

[4] Bulpett won in the Rugby School Crick Run, 1870, beating J. G. Adamson, H. B. Lefroy, T. F. Squarey, G. S. Bigg, S. H. Lomax, and J. H. Beck (Old Rugbeian). Course: fair hunting country.

CHAPTER III.

TRAINING FOR PEDESTRIAN AND OTHER PURPOSES.

SECT. 1.—PREPARATORY TREATMENT.

GENERAL REMARKS.—It is an indisputable fact, that no animal is so much improved by training as man—none stands such long and severe preparation with advantage—and none displays the difference between condition and its absence in so great a degree. But it is not only that man may be enabled to do certain feats of activity and strength that training is desirable, but that he may do them with pleasure to himself, and even with advantage to his general health; and this marks the grand principle which every man who values health should constantly keep in view, namely, that no one should attempt to compete in any contest requiring agility or strength, unless he has had such a preparation as shall enable him to perform his task without feeling any ill effect from it. For instance, the man in condition can row through a race of three or four miles, in which his whole powers are taxed to their very utmost, and shall, at the end of it, be almost blind from the exertions he has made; and yet before he gets out of the boat he is "all right," and could go through the same in half an hour without injury—whilst the man out of condition lies nearly fainting, or perhaps quite insensible for many minutes or even still longer, and is only revived by stimuli to an extent which will not allow any further liberty to be taken with his naturally strong constitution. Pluck will do much in place of condition; but numberless are the instances of ruined health from the excessive drafts which have been made upon this valuable quality, whilst a little care and abstinence would have prevented any such irreparable misfortune. To enable the man who is of sound constitution—but, from mismanagement, out of health—to restore himself to such a state as will allow him to go into training without mischief, is rather a difficult

task in most cases, because it not only requires some skill to know what to do, but also great self-command to avoid that which ought not to be done. In the vast majority of instances the health has been impaired by excess of some kind, and in many by every variety of excess which human ingenuity can suggest. But it is wonderful how completely the anticipation of an Oxford and Cambridge match at Putney, a pedestrian or any similar contest, will enable a "fast man" to throw all temptation on one side, and adhere to all the rules laid down for his guidance with the rigidity of an anchorite. His reply to all tempting offers is, "No, that is bad training." Such is not always the case, but it is true to a great extent; and more pluck is frequently shown in abstaining from temptation than in sustaining the prolonged efforts which such a race demands.

There are two kinds of excess which are the most likely to produce such a state as I am supposing—namely, excess in eating, drinking, &c., and excess in literary or other sedentary pursuits. Either will for a time entirely upset the powers of the stomach, and in fact of the whole system, and each will require very different treatment in order to restore those powers. These conditions will also vary very much according to the rank in life, habits, and natural constitution of the individual. For instance, a gentleman's son, having been generously brought up, goes to the university and indulges to excess in wine, smoking, &c., all the while taking strong exercise. For a time his naturally strong constitution enables him to withstand the attacks of the poisonous doses of wine and tobacco which he is taking, but soon his hand begins to shake, his appetite for solid food ceases, his eyes become red, his sleep is restless and unrefreshing, and he is threatened with an attack of delirium tremens. Now, if in such a state as this an attempt is made to go suddenly into training, the consequence is, either that the above disease makes its appearance at once, or, in milder cases, that the stomach refuses to do its duty, and that the prescribed work cannot be performed, from giddiness, faintness, sickness, or headache. By a little care and time, however, this state of things may be removed. But suppose the case of a young man in a lower rank, who has been brought up on a spare and rigidly abstemious fare, and who from circumstances is suddenly allowed to indulge in all the temptations of the public-house; he has no other resource —no hunting or cricket to take up his attention—no lectures to attend, and the consequence is that beer and tobacco commence the day, and tobacco and spirits wind it up. Such a man suddenly finds all his energies going, his mind dull and enfeebled, his body weak, flabby, and bloated; in a happy moment he bethinks himself that he will take to boating, or some other amusement which he has formerly perhaps been addicted to, and at once proceeds to the river or the road. Well! what is the consequence? Why, instead of feeling the better for his exertion, he is completely knocked up, and perhaps permanently discouraged and deterred from any further trial; in fact, he requires a much more careful treatment to get him into a state of health fit for such an exertion than the Oxonian or the Cantab, because the change from his former habits has been greater, because the imbibition of beer and spirits has been more uninterrupted, because the rooms he has frequented have been less perfectly ventilated, and because he has taken little or no exercise. Indeed, it is astonishing what quantities of intoxicating drinks may be imbibed without much injury, provided that a corresponding amount of exercise is regularly taken.

A far more difficult task lies before the reading man, who has devoted twelve to eighteen hours a day to a preparation for honours, and who, finding his health giving way, determines upon going in for honours of another kind. Here the nervous system has been overtaxed, aided by green tea, wet cloths round the head, and perhaps a liberal supply of tobacco; the consequence is that the neglected muscular system is unfit for exertion, and the limbs become stiff and cramped on the slightest effort. This state of things requires many weeks, or even months, to restore the system to a state fit for undertaking any severe work, because the muscles are wanting in solid material, and the nervous system is so irritable as to be totally incompetent to stimulate them with that steadiness and regularity which is essential to success. The same state of things often occurs

in the counting-house—a young man is confined for ten or twelve hours a day to the desk and ledger; he has no time for exercise, and his nervous system is over-stimulated by incessant calculation, and also by the constant view of the white paper spread before his eyes; he gets the "ledger fever," and many a young man is rendered by it utterly incompetent to continue this kind of drudgery. Some relieve this unnatural condition by early rising and pedestrian or horse and rowing exercise. Of late this plan has become much more feasible, in the metropolis especially, owing to the foundation of numerous athletic clubs, and, if carefully entered upon, is of great service; but it requires some caution at first, and is almost wholly useless if persevered in without those essentials which I shall endeavour to point out.

Treatment of the Free-Liver of Active Habits.—I have already observed that the "fast man" who has usually taken a due amount of exercise, has a comparatively easy task, if he only has the power to command himself, and to check those practices which he has been indulging in. But let this be done with due caution; many is the man who has been driven into *delirium tremens*, by suddenly leaving off all stimuli. The best plan is to substitute ammonia in some shape for a part of the accustomed alcohol, and for this purpose to take the following draught once or twice a day, or oftener if that dreadful sinking sensation comes on which is so distressing to those who have indulged to excess in wine and tobacco:—Take of aromatic confection 10 grains, sal volatile 1 drachm, bicarbonate of soda 5 grains, tincture of gentian 1 drachm, water 1 ounce—mix. The quantity of beer, wine, or spirits should be diminished one-half every two or three days, until brought down to the allowance to be hereafter fixed for training purposes; *tobacco should be totally eschewed.* I have invariably found that total abstinence from smoking is easier than temperance. There is not the same danger in leaving it off as is the case with wine, spirits, or beer—in fact there is no danger whatever in so doing; whilst in alcoholic drinks the reverse is the case. My advice, therefore, is, in all cases where the constitution has been impaired by smoking and drinking, to give up the former at once and entirely, but to be very careful in gradually leaving off the latter. With regard to the kind of stimulus which should be adopted, much must depend upon the previous habits. In most cases, when the stomach is not much upset, malt liquor will suffice; and, if sound and unadulterated, it is the most wholesome beverage; but in many cases it will not do to suddenly leave off wine and spirits, and adhere to malt alone. In such cases an occasional glass of brandy and water or claret must be allowed. The latter, where it agrees, is an excellent wine for the purpose of gradually lowering the stimulus. No wine suits the nervous system better, and if mixed with soda-water, it may be drunk to a considerable extent by those who have accustomed themselves to a stronger stimulus. When the stomach is very much disordered, it may be mulled, and taken warm. Those who have been smoking and drinking to excess have stimulated their kidneys, and skin to secrete a greater quantity than is natural to those organs. This is an effort of nature to get rid of the poison which has been absorbed into the system, but the effect does not immediately cease on the removal of the cause. Hence the thirst continues, and some liquid must be given to quench it. It is for this purpose that I advise claret and soda-water to those who can afford it; or to others, porter or bitter beer mixed with soda-water in equal proportions.

Great care must be taken in all these cases in the administration of purgatives. No one who is a free-liver is able to bear strong aperient medicines without some injury to the system, and although very commonly given, it is a practice which ought to be most cautiously adopted. If the liver is acting well (which may be known by the yellow or brown colour of the fæces), a simple black draught may be taken, consisting of half an ounce of sweet essence of senna, with a small teaspoonful of salts dissolved in an ounce of warm water; or one or two compound-rhubarb pills may be taken at night. If, on the contrary, the motions are of a clay colour, five grains of blue pill should be taken at night, followed by the above draught in the morning. Should the bowels be relaxed, and inclined to act more than once a day, a wineglassful of decoction of bark, with a teaspoonful of the com-

pound tincture of bark, should be taken two or three times a day. If very loose, 20 or 25 drops of laudanum may be added to each dose; and if very watery, with griping pains, 25 to 30 drops of diluted sulphuric acid may also be given with it. This will almost always check the diarrhœa, and is also useful in giving tone to the stomach and producing an appetite. If more severe remedies are required, the aid of a medical man should be sought for.

During the period in which this plan of proceeding is being carried into effect, it is of the greatest consequence that the mind should be occupied, or rather amused, in some way. This point cannot be too much insisted on, for upon it depends in great measure whether the attempt to restore health to the body shall be successful or the reverse. There is no point more neglected, both in the preparation for training and in the actual period of severe work, than this, and yet it is really the one which ought most to be inculcated. In the first place, bodily exercise without amusement is mere drudgery—it tires, but does not lead to a restoration of power; whilst, if given with some mental excitement, the fatigue is scarcely felt, and what little is experienced is speedily followed by a reaction which asks for more work of a similar character and tendency. Let anyone contrast the effects of a walk or ride, without object or companion, with either the one or the other when taken for the purpose of making a call, or with any other specific object, especially in company of an amusing companion. From the former (called a "constitutional," because it does *not* benefit the constitution), he has returned jaded and out of spirits, whilst from the latter he has experienced an amount of exhilaration, varying of course with the nature of the object and the agreeableness of his companion. Nothing conduces more to a successful prosecution of this plan of self-treatment than the mutual agreement of two persons whose object is the same, to assist one another by their example. Let two persons agree in earnest to restrain one another when tempted, and also to amuse one another by sparring, or fencing, or riding, or walking together, —or, indeed, any kind of gymnastic exercise. This will aid the purpose of both, as far as the restoration of health is concerned, and they will also find it much more easy to "put the stopper" upon each other than upon themselves. Even if they are not both going into the same kind of training, the preparation for all kinds is the same, the grand object in all cases being to leave off injurious food and drinks, to avoid smoking and venery, and to take sufficient exercise conjoined with amusement, to tire without prostrating the muscular system.

The diet should be plain, but varied. Roast beef and mutton, or chops and steaks, with any vegetables that agree with the individual, may be ndulged in. Poultry, game, and fish, are not injurious; and even pastry, if good and plain, will do no harm whatever. In fact, almost any *wholesome* and *plainly* cooked food except pork and veal may be taken, provided it agrees with the constitution and enough exercise is taken. It is better to put off the period of rigid dieting to the actual time of training, as the stomach will seldom bear it for any length of time. In the present day, it is scarcely necessary to inculcate the free use of cold water every morning. It is not desirable to bathe during this time, though in warm weather a mere plunge into a river, or, better still, the sea, is very serviceable; but at all seasons the whole body should be sponged every morning, using in very cold weather water at the temperature of 60 or 65 degrees of Fahrenheit. The body should be well rubbed with a rough cloth until a glow is produced; and the aid of an assistant is here very beneficial. Flannel should always be worn next the skin. Such is the comparatively easy task of those who have continued to take strong exercise, concomitantly with their free indulgence in wine, tobacco, and all their little etceteras.

The Treatment of Indolent Free-Livers, who have indulged themselves in the same way, whilst at the same time their bodies have been wholly idle, or they have only gone to the limits demanded by the necessity of seeking for the gratification of their appetites, is much more difficult. In such a case very strong control is required, and unfortunately it is in such persons generally absent. Few young men indulge themselves in this way unless they are of a weak and yielding nature,

easily led away by importunity, and unable to resist temptation. Many men of strong mental and bodily powers have been led into a course of dissipation; in fact, they have not been led, but in the impetuosity of their temperaments have rushed into it. These natures have only to resolve, and the thing is done; they decide upon doing or letting alone, and "*c'est un fait accompli.*" But far different is it with the man of perhaps Herculean body, but weak and vacillating mind. He, alas! resolves and breaks his resolution forty times a day, and is at once an object of pity and contempt. Such a man may be restrained by a master mind, but rarely has the power to control himself. The sight of a public-house is too much for him, and he cannot resist the temptation it presents. But though, if taken in hand by another, he may be made use of for a time, he is rarely worth the trouble he gives, as the slightest want of vigilance leads to an outbreak which upsets all the good effects of the previous careful supervision. The great difficulty here is to find amusement for the body and mind—the habits of intemperance and idleness have led to a dislike of all exercise, or rather, perhaps, in many cases, the natural indolence of body and mind has led to habits of intemperance. If, however, it is desired to effect the change by means of this supervision, it must be as gradual as in the former case with regard to diet, and much more gradual and careful with reference to the kind and amount of exercise. It sometimes happens that a good-natured and easy-tempered man has given himself up to excesses and idleness, and yet, being a good oarsman, his services are demanded for his college or university boat. Here some trouble may be spent in restoring him; but such a case is the only one in which it will be repaid, and even then it is a hazardous experiment. The only plan is to hand the poor fellow over to some one person, who is likely to exercise a firm, yet quiet control over him, and to inculcate upon this person the necessity of carefully watching his *protegé* at all hours of the day and night. He should walk, ride, &c., with him; beginning by short distances, and gradually increasing them. Let him by all means take him to cricket matches, coursing meetings, races, &c., or any kind of out-door sport which is most likely to occupy his attention and at the same time to keep his body gently exercised without exhaustion; then get him home, and after a moderate dinner, and a game at billiards, chess, or cards, for an hour or two, if possible let him be persuaded to go to bed. Here it is not desirable that the hours of bed should be shortened; let him lie till nine or ten in the morning, because he will from his previous habits require longer rest than the average time, and because there is already great difficulty in occupying the hours of the day, so as to keep him out of temptation. In this manner these two classes of men may be restored to health, or at least to such a state as will fit them to undertake the severe work and strict dieting which training for any match will require. Both are likely to be considerably stouter and heavier than the weight at which they will be best able to exert their powers; but this is not always the case, as it sometimes happens that the man who has been indulging to excess in every kind of temptation has lost weight to a considerable extent, and regains it on submitting to the loss of those stimulants which have upset his stomach.

The Over-Studious Man.—Before proceeding to the treatment of the over-studious, let me earnestly remind those who are desirous of excelling in literary pursuits, that without bodily health the mind is unfitted for exertion in *acquiring* knowledge. It is true that many men, who have already stored their brains with facts, are enabled, even after becoming complete valetudinarians, to impart knowledge to others; but no one can grapple with difficulties for himself while in that state; much time is often lost, and strength squandered, through over-anxiety in reading; but I am fully and firmly convinced, that if eight, or, at most, ten hours a day are well employed—that is to say, if any man really works hard during that time—he will have done all of which his mental powers are capable. This will leave him seven or eight hours for sleep, and six or seven for meals, exercise, &c. Few men, however, of ardent temperaments and studious habits, are capable of thus portioning their time; but they may depend upon

the fact that, beyond the hours I have named, they will gain nothing by poring over mathematical problems or classical authorities. If this advice were acted up to there would be no occasion for the directions I am about to give; but, from the constitution of the human mind, it is not likely to be followed in many cases. It is needless for me to remark, that in a mind upset by literary study or mercantile accounts, the best plan, if practicable, is to give up reading and writing entirely for a time; but this is seldom to be effected; and if not, all that can be done is to improve the health of the body as much as possible whilst the strain upon the mind continues. In the case of a man who can arrange his own hours of study, and has only a certain object to effect by a given time, I should strongly recommend him in no case to exceed eight hours a day, and, if possible, not more than six. This will leave him ample time for the prosecution of any bodily training which he may require; and if the health has not been much impaired, and the constitution is naturally strong, he will find that in proportion as he is able to increase the amount of bodily exercise, so will his mental powers recover their tone. But to proceed to details.

Few reading men determine to go in for a course of training until they are a good deal upset by confinement; and in them some little care is necessary. First and foremost, I should insist upon their giving up smoking, green tea, and coffee, except at meals. There should be no over-stimulation of the brain; but what work is done should be done without any unnatural stimulus. It will be found a very good plan to have two reading-desks—one of a height for sitting to, and the other adapted for standing. Then, when drowsy, or unable to fix the attention to the sitting desk, let the change be made to a standing position; and in this way the necessity for green tea, or wet cloths to the head, may be avoided. Next, I should advise that the hours of study should be divided into two equal periods—the first commencing immediately after breakfast, and the second immediately after tea. In this way all the middle of the day may be given up to recreation, dinner, and exercise; and the following hours are those which I should lay down as the most proper, though of course they may be slightly varied to suit particular circumstances. Breakfast, at 8; reading, 8.30 to 12.30; light lunch, on biscuit or sandwich, and glass of bitter beer, or sherry and water; exercise from 12.30 to 4.30; dinner, at 4.30; relaxation of body and mind till 6.30, when take a cup or two of coffee or black tea; then read for two, three, or four hours, according to circumstances. Then go to bed. When first these hours are adopted the exercise must be very gentle, and of an amusing character; if on horseback so much the better, though this kind of exercise is not sufficient for the purposes of training, except as a preparation for walking and running.

Many men are able to indulge in a nap after dinner with advantage; but, generally speaking, it is prejudicial. If, however, the mouth feels moist, on waking, and there is no palpitation of the heart, or flatulence, I am strongly of opinion that it does good rather than harm. It is the natural instinct of all animals to sleep after eating, and certainly it is that of man. The reason why sleep after dinner is said to disagree with everybody is, that it is so often interrupted, that it seldom has fair play. Now, disturbed sleep we know to be prejudicial at any hour; and if it cannot be obtained without much chance of interruption, it is better to avoid it altogether. If, however, an hour, or rather more, can be devoted to a nap, and it is found to agree with the individual trying it, the mind will be refreshed as well as the body; and, after a cup of tea or coffee, the studies may be prosecuted with renewed vigour. Thus I have shown how the studious man can devote sufficient time for the purpose of preserving or restoring his bodily health; and, as we shall hereafter see, enough also to allow him to go into training for any *ordinary* competition in rowing or pedestrian exercise.

Now as to the counting-house clerk. His hours are fixed, and all that can be done must be done before 9 or 9.30 a.m.; or, in the summer season, after office-hours; nevertheless, many men have trained themselves in spite of these difficulties, but it is arduous and up-hill work. In the winter season there is no light much before eight o'clock, and consequently it is quite out of the

question to attempt anything in the way of regular training. Health, however, may be preserved, and preparations made for training during the summer. For this purpose, the best course to pursue is to arrange so that it shall be positively necessary to walk backwards and forwards to the counting-house night and morning. This is much better than attempting to walk without any special object; for in our climate the obstacles offered by the weather are so numerous that it would be postponed three or four times a week; but when it *must* be undertaken through all weathers, the benefit to health is fully attained, and the Englishman's privilege to grumble is also gratified. Thus, by devoting only one hour night and morning, to a four-mile walk to the house of business, sufficient bodily exercise may be obtained to keep the health tolerably good during this season; and in the summer it is possible to extend the walk, or even, by very early rising, to go into actual training for any particular exertion. Much depends, however, on habit, as regards violent exercise before breakfast, as in many cases it prostrates a man for the rest of the day.

Whilst discussing the subject of health, I would strongly impress upon all who have the management of those establishments where young men are collected for the purposes of trade, that it is very important that some set time should be fixed for their meals. It is, I believe, the custom for one-third, or one-half, of the young men engaged to dine first, and then, as soon as they have hastily swallowed their meal, for the next division to take their places. This plan is supposed to be very advantageous to the proprietors; yet even of this fact I am very doubtful; but to the assistants it is exceedingly injurious. In many cases ten hours a day (in some few even a longer period) are given up to work, interrupted only by the scramble for a meal. This is more than the human frame is calculated to bear; even the farm-labourer or the "factory hand" is allowed his breakfast and dinner hour; after which he returns to his work, having laid in a fresh stock of nervous excitability. The consequence of the long strain upon the mind and animal spirits is, that at times they are overpowered, and errors occur which do more harm to the parties interested than is counterbalanced by the apparent saving of time.

The directions I have just given are suited to those cases only in which the state of health is still such as to allow of a prosecution of the usual studies or employment. But there are numerous instances in which the mind and body are both totally upset, and in which it is not only prudent, but imperatively necessary, to give up all attention to business. These are somewhat beyond my province, for in such cases the aid of a medical man must always be required, and his counsels ought to be implicitly followed. They also rarely occur unattended by such a disordered state of stomach as to require the use of medicine and diet; and, moreover, such cases are precisely those in which the moral control and superintendence of a judicious medical man are demanded. There may be some few in which change of air and scene, agreeable society, moderate exercise, &c., would be quite enough; but it is impossible to draw the line in such a way as to be useful, and, therefore, my advice would be such as I have given above.

Sect. 2.—Actual Training—General Management and Diet.

Training for Walking.—Whether the object is to compete in running or walking, an easy walk before breakfast for half an hour will just empty the small intestines of their last meal, and prepare the stomach for the breakfast; more than half an hour, however, I am confident, is too long to wait, especially if, as always ought to be the case, the supper has been a mere apology for that meal. For an hour after breakfast, that is, till near eleven o'clock, the pedestrian should amuse himself as he likes best, with billiards, or any other game; but at eleven he should be ready dressed in his walking costume.

The best dress is what is usually called "University costume," which consists of a pair of drawers made of coloured merino or silk, reaching to the knee-cap only, and secured round the waist by a slight elastic band over the hip bones. For upper clothing a thin jersey is worn. The shoes should be large enough to give the feet free play; be laced down nearly to the toe, with a sole about a quarter of an

inch thick, and a slipper heel, with a few "sparrow bill" nails in it. If socks are worn they should be of best chamois leather, merely covering the toes, and not showing above the shoe. From eleven till two, or half-past two, his first walk should be kept up without stopping for a moment—that is to say, after the first week, during which time he has been gradually increasing the time from an hour and a half to the above lengthened period. In any case the pedestrian should be accompanied by his trainer, who should amuse him as much as possible by anecdote or other mode of conversation. After dinner, one or two hours should be allotted to rest, in the recumbent position, on a hard mattress or horsehair sofa; and then a short distance, according to the length of the race, should be gone over at *top* speed. It should be borne in mind, that according to the intention of the pedestrian must be the distance over which he is trained; thus, if he is only preparing for a short race, either running or walking, he need only get himself into good health, and keep in that state by the means I have already described; and, in addition, take two or three hours' walking and running exercise per day. More than this has a tendency to diminish the speed, though if the intention is to train for a long distance, that quality must, to a certain extent, be sacrificed. There is no question that speed is, to a great extent, lost, if the work is kept up more than three or four hours a day—that is to say, speed for one hundred or two hundred yards. But if the object is to attain the highest speed for ten or fifteen miles, then the powers of endurance are to be tested; and the training must be not so much at a top speed for that distance, as at a less pace with occasional spirts for five miles farther at the least. The trainer should be a good walker himself, and should draw out the powers of his pupil by walking against him, taking care not to dishearten him, even if he has the power, by walking ahead; but just stimulating him by competition, and yet keeping up his spirits by allowing him to beat him in the amicable contest. Everything in many cases depends upon mental treatment, and many races are lost by the anxiety which is felt for many days and nights prior to the day of trial. In other animals there is not this knowledge of what is to come; but this is the worst difficulty met with in training men, many of whom will lie awake night after night from a nervousness as to the result. Hence, the trainer should by all means encourage his man, and endeavour to do away with this fear of losing, by inspiring confidence in his powers on all occasions.

Training for Running is conducted on similar principles to that for walking, except that it is necessary to avoid too much *running* work in short matches. Here walking must be made the means of improving the general health, and running only adopted for about the length which is to be run. Beyond this, long-continued running makes a man slow, and he is apt to get his hands down, a habit which is fatal to running spirts. The trainer will, in preparing his man for these short matches, make him run daily two or three times over the distance intended; and either run against him *with a start* of a few yards in advance, which gives him confidence, or time him exactly, keeping the result to himself. When the distance is a longer one, it must not be done more than once every other day, according to its length, but at a good speed, and with all the encouragement and excitement of competition with the trainer. In all cases of training for long distances, at least five or six hours a day must be spent in walking and running, changing from one to the other as a relief during the early part of training. Two golden rules to be observed are, never to let a man do his *utmost* until the *actual* race itself, and to give him immediate rest for a few days if he appears jaded, as by this means his spirits will be revived and elasticity of body restored. Man, however, bears severe work in a wonderful manner; and if the appetite continues good and the sleep is sound, without dreaming or starting, the trainer need not be apprehensive that his man is doing too much.

Reduction of Fat.—It will, I think, generally be advisable, before commencing strict training, to take an ordinary dose of aperient medicine. This may be either castor-oil or Epsom salts and senna, commonly known as black draught; or the compound

rhubarb pills will answer very well in some persons. If the liver is torpid (which may be known by the pale colour of the motions), then five grains of blue pill should be taken at night, and the oil or draught in the morning, and the same should be repeated every two or three days till the colour becomes of a good brown or yellow. For any other purpose aperient medicine is to be avoided, and it will generally be found that beyond the first dose, which I think good as clearing off all undigested food, it will seldom be wanted. Some men have such an abundance of fat that they weigh two or even three stone more than they ought to do. The consequence is that not only is all that weight a dead loss, but the fat itself actually interferes with the due action of the muscles, and especially of the heart. Two modes of sweating may be adopted—one natural, the other artificial; the former is by far the best and healthiest, but either should be used the first thing in the morning, rising from bed a little earlier for the express purpose.

Natural Sweating is managed by putting on extra clothing over those parts more particularly which are loaded with fat. Thus, if the legs are very fat, two or three pair of trousers should be drawn on; if the abdomen is full, then a double apron of flannel should be suspended from the neck under the trousers; and if the arms and neck are loaded, one, two, or three thick jerseys may be pulled on, and a woollen shawl wrapped round the neck. When thus clothed, a brisk walk, or slow run of a few miles, brings on a profuse perspiration, which may be kept up for an hour or so, either by being covered up with horse-rugs or a feather-bed, or by lying in front of a good fire. At the expiration of this time the whole of the clothes should be stripped off, beginning with the upper part of the body, and sponging each limb with hot salt and water before drying it with a coarse towel, after which horse-hair gloves should be used freely, and the dressing may be as usual, taking care to expose each limb as short a time as possible. Such is the natural mode.

Artificial Sweating can be accomplished by a Turkish bath; or by the plan first proposed by Preissnitz, and since then much used in this country by other practitioners. This is as follows:—The whole body should be stripped and immediately wrapped in a sheet wrung out of cold water, but not so as to get rid of all the water. Then, rolling the patient in a thick blanket, and including the arms, like a mummy, he is to be placed beneath a feather-bed, covering all up to the chin. In a quarter of an hour, or rather more, reaction comes on; and a most profuse perspiration breaks out over the face, and, in fact, over the whole body. Among the hydropathists it is usual to supply the patient liberally with cold water, by small draughts at a time, during the sweat; but for our purpose this is not desirable, because it causes too great an action on the kidneys, thereby weakening the frame considerably. When this sweating has continued for an hour to an hour and a half, everything should be taken off, and cold water poured over the whole body, either by means of a shower-bath or a common watering-pot; then rub dry, and clothe. This artificial mode of sweating is not so likely to give cold as the natural one, and it does not exhaust and tire the frame nearly so much. It also produces great buoyancy of spirits, and it may be graduated much more exactly. It has, however, the disadvantage of producing a liability to boils, which, in the rower, are sufficiently annoying without this sweating process. Wherever there is an unusual collection of fat, on that part must, in either mode, be heaped a greater amount of clothing, and especially if the shoulders should be clogged and loaded. No one can reach well over his toes if his shoulder-blades are confined, or if his abdomen is too bulky; and the first thing to be done is to sweat down the fat as I have described. Either of the above processes may be repeated two or three times a week, and they are far better than night sweating by Dover's powder or any of the sweating liquors which formerly were so much recommended.

The Use of Sweating Liquors is most objectionable, and should never be resorted to if avoidable. Whatever medicine is taken for this purpose, it would be unsafe either to use cold water next morning, or to expose the body as in rowing; and therefore

they are quite inadmissible in an exercise which positively necessitates exposure of the body. It has been long held that for long-continued or fast work sweating medicine is absolutely necessary; and no doubt many of our best runners have used it. I believe, however, in all cases, the hydropathic wet-sheet packing will be found far better for pedestrian purposes. It gives much greater lightness of spirits, more agility of limb, and less tendency to rheumatic stiffness. Let any person make a trial of it, and he will "throw physic to the dogs" ever afterwards, at least for this purpose. It may be used twice, or even thrice a week, before breakfast, and 1½ lb. to 2 lb., or even 3 lb. may be got off each time it is applied. In sweating for pedestrian purposes, the arms and body should be clothed much heavier than the legs. The great object is first to unload the great viscera from all fat interfering with their functions, and next to reduce the absolute weight of the whole body above the hips, including the abdomen, chest, neck, and arms, which are all of little use in walking and running, as compared with the legs. It is very easy to apply the wet sheet exclusively to the trunk and arms, and to clothe the legs only slightly, or only just so much as to prevent a chill. Natural sweating is wholly inadmissible in this kind of training, since it shortens the stride from the quantity of clothing, and makes the pace slow, slovenly, and dull; the choice, therefore, is between the wet-sheet packing and a sweat by a scruple of Dover's powder at night, or half a pint of whey made with white wine, and with 30 drops each of antimonial wine and sweet spirits of nitre added. This is no doubt a strong sweater, but it upsets the stomach and leaves the skin to be easily chilled. In any case, the whole body should be rubbed with horsehair gloves night and morning.

THE FOLLOWING DIET will, I think, be found the best for all training purposes, except the reduction of weight for riding, to which I have alluded at page 549, where a great restriction must generally be put upon the appetite:

BREAKFAST.—There is no doubt that the very best food for this meal is oatmeal porridge, with the addition of a certain allowance of beef or mutton, and a little bread; but many have the greatest objection to this diet, and never eat it without loathing. For them, I believe, the next best beverage is a pint of table beer, home-made, and not too strong, a larger allowance of bread being given with it. It is not desirable to stint the appetite unless very enormous, or unless there is a great superabundance of fat; but I believe it will, in most cases, be found more advantageous to reduce the weight by work and sweating, than by starvation. The best mode of dressing the meat is to broil it; and here I must say a word about the degree of cookery to which it should be subjected. It is generally directed that the steak or chop should be quite underdone; this, I am sure, is a fallacy. In broiling, very little nutriment is lost, after the outside is once caught by the fire. Now, if nothing is lost, there is much gained by keeping the steak on the gridiron till properly done through: for the food is rendered much more palatable to most, and certainly more digestible to all. I have known many who were thoroughly disgusted by their "red-rags," as they have called their underdone steaks, and, from their dislike to such food, were quite unable to digest them. Tea and coffee are not good for training purposes, though I do not think them so bad as is generally supposed, if not taken too strong; cocoa is too greasy, and not so good as tea—which, if taken, should not be green. I am inclined to think, that in those cases where tea or coffee is habitually taken, and porridge or beer is much disliked, it is better to allow them than to attempt too great an alteration in diet. Butter, sauces, and spices should be carefully avoided; and nothing but salt, and a very slight dash of black pepper, used as a condiment.

DINNER.—This important meal should consist of roast beef or mutton, or, occasionally, boiled leg of mutton may be allowed as a change; but veal, pork, and salt beef or bacon should be avoided; also goose, duck, and wildfowl generally. Roast fowls, or partridges, or pheasants, are very good food. Hare is too apt to be accompanied by high-seasoned stuffing, without which it is scarcely palatable. Nothing is better than venison, when comeatable; but it should be eaten without

seasoned sauce or currant jelly. As to vegetables, potatoes should be eaten sparingly—not more than one or two at a meal; cauliflower or broccoli, or any vegetable in season except cucumber, or any hard root, is allowable as a digestive. Bread may be given *ad libitum*, and about a pint to a pint and a half of good sound, home-made beer. If this does not agree, a little sherry and water, or claret and water, may be allowed with the meal; and a glass or two of the former wine, or of good sound port, after dinner. When the training is continued for any length of time, and the previous habits of the party have accustomed the stomach to it, I have found the occasional use of white fish—such as cod or soles—a very useful change. Nothing disorders the stomach of man more than keeping to one diet; "*toujours perdrix*" is enough to tire any one even of so good a fare; and this must be constantly borne in mind by the trainer. The round he can make is not very extensive, but let him by all means stretch it to the utmost limits of which it is capable. It is even desirable to give an occasional pudding, but it should always have bread for its foundation. A good cook will easily make a very palatable pudding of bread, with a little milk and an egg or two; and this, served up with fresh green gooseberries boiled, or any common preserve, is by no means disagreeable to the palate, or unwholesome to the stomach; but let it be only as a change, not as otherwise useful. The grand articles of diet are beef and mutton, with bread or porridge; and, if the stomach and palate would accept them gratefully, no change would be necessary; but, as they seldom will, the best plan is not to attempt too much.

Supper.—Many trainers object to this meal; but I am satisfied from experience, that unless the training is of so long a duration as to thoroughly accustom the stomach to the long fast from dinner to the next morning, it is much better to allow a light meal at eight o'clock. Oatmeal porridge is for this purpose the best; and no one will be the worse for a pint of it, with some dry toast to eat with it, or soaked in the porridge itself. I do not believe that meat is ever necessary at night, except in very delicate constitutions, who require unusual support. For such cases I have found a chop at night, with a glass of port wine, or even of egg and sherry, a very valuable means of keeping up the strength. Indeed, it will be found that no absolute rule can be laid down for all cases; and the trainer requires great experience and aptness for his task to enable him to bring all his men out in the same degree of relative strength. Nothing is so likely to destroy a boat's chance as a variable state of condition in the component parts of the crew. It is far better that all should tire equally, than that half should shut up early in the race, while the others are capable of using their full strength. Hence, as I have before remarked, some will require much more liberal and generous diet than others. If, for instance, the habit is gross, and the appetite good, it will be needful to allow only the plainest diet, and to vary it very little. By this precaution, enough, and not too much, is sure to be taken, and the amount of work will ensure its digestion. If, on the other hand, the constitution is delicate, with a want of appetite, want of digestion, and tendency to too great a loss of flesh, then it is desirable to allow considerable change from day to day; and, as far as is prudent, to comply with the particular fancies of the palate. Many stomachs bear port wine well; and in those who have a tendency to diarrhœa it is often indispensable. Others, again, are purged by oatmeal, and this is a sufficient reason for avoiding porridge. In some all the bread should be toasted, to prevent diarrhœa, whilst in others, when constipation is present, coarse brown bread, made from the genuine undressed flour, is a good remedy for that troublesome evil. Whatever bread is eaten should be two days old, and the beef and mutton hung as long as the weather will permit. The best part of the sheep for chops is the leg of a two or three-year-old wether; and for steaks, a well-hung rump or the inside of the sirloin.

It is not unfrequently the custom to allow the crew to put into a river-side tavern during the hours of practice, and take half a pint or a pint of beer or porter each. This plan I am sure is bad; the strength ought never to depend upon *immediate stimuli*, and it is far better to shorten the practice than to keep it up by these means. I am quite sure that in training there are

very few who require more than three pints, or at the outside two quarts of good beer per day, of the strength of five bushels to the hogshead; and the average quantity required is certainly not more than two pints and a half per man. Allowance must of course be made for previous habits, and for strength or weakness of constitution, in the particular individual.

In the early days of practice, and in the race itself, great distress sometimes occurs; there is considerable blueness of the face from congestion, and the breathing is laboured and difficult. The best remedy for this state is a glass of warm brandy and water, and plenty of hard friction on the feet, legs, and thighs; or, if it still persists, a warm bath at 98 degrees.

CHAPTER IV.

TREATMENT OF ACCIDENTS OCCURRING IN TRAINING.

Blisters of the Hands and Feet.—These troublesome little companions occur either on the hands from rowing, or on the feet from walking—in both cases without due preparation. They also occur in a still more troublesome situation, either from the thwart in rowing, or from the saddle in riding; but in the latter case only in the very *raw* and young equestrian. Should they arise on the hands, they should be pricked with a fine needle, if this can be done before they have burst. The needle should be inserted obliquely, and the watery fluid contained in the blister should then be pressed out; and this should be repeated as soon as the blister has filled a second or third time. In this way the contact of the air is avoided, and in two days the true skin becomes protected by a new cuticle or scarf-skin. If, unfortunately, the blister is broken, the best plan is to apply some collodion with a brush; but it gives considerable pain, and seldom remains on more than six hours, after which time it requires renewal. If the pain of this is objected to, then apply either finely-carded (medicated) cotton in a thin layer under a kid glove, or finely-powdered gum arabic; but in either case the hands must be kept from water carefully until the expiration of twenty-four hours. If possible three days should elapse before the oar is again taken in hand; but if the oarsman cannot be spared, a kid glove should be put on over the collodion. When the feet are the seat of the mischief, there is the same necessity for the preservation of the cuticle, and the needle should be used in the same way; if, however, this protection is removed, a piece of fine kid should be spread with soap plaster, and applied over the skin, extending for at least half an inch beyond the blister in every direction. This treatment answers on the feet, while on the hands it is wholly useless, because the friction of the oar soon rubs off the plaster, while under the shoe it remains tolerably well and smoothly applied. Where the blister exists on the seat of honour, in consequence of the friction of the thwart, it is very difficult to manage, and I have seen hundreds of men with their flannel trousers extensively stained with blood from this cause. Collodion is the best remedy, but even that is of little use, and the only plan that I have ever known at all effectual, is to wear a pair of tight wash-leather drawers, extending only a few inches down the thighs, If these are made to fit very nicely, and are well oiled with neatsfoot oil they will afford astonishing relief, and enable a man with extensive "raws" to row in tolerable ease and comfort; they require, however, to be carefully cleaned and oiled each time they are worn, without which attention they are worse than useless.

Strained or Ruptured Muscles.—In walking, and more especially in running and jumping, one or more small fibres of the muscular tissue are occasionally over-strained or absolutely ruptured. If the mischief is extensive, nothing but rest will allow of union and reparation, but very slight injuries may be rendered so bearable as to allow of exercise without prohibitory pain, by means of counter-irritants rubbed in externally and local pressure applied by means of a bandage. The object of

the latter, is to throw the injured muscles "out of gear," to use an engineer's term, and thus enable other muscles to do their work, and to some extent that peculiar to the injured ones, which they could not otherwise do without calling upon the latter to act at the same time. As a counter-irritant nothing is better than a mixture of turpentine, ammonia, and soap liniment, in equal proportions. The bandage requires some skill for its proper application, but not necessarily the hand of a surgeon. It is generally only at the seat of injury, and very often an india-rubber band will act better than any unyielding bandage, however well applied.

Sprain of Tendon or Joint.—When a tendon or joint is sprained, more time is generally required for repair than in the case of a muscle, as the vitality of these parts is low. If recent, cold applications, such as vinegar and water with the addition of some spirit, is the best remedy. When the heat consequent on the injury ceases, apply the embrocation recommended for strained muscle, and in a few days have the joint strapped up with brown soap plaster. These injuries, however, are generally so severe as to necessitate a surgeon. In chronic cases there is nothing like pumping on the part once or twice a day, for a longer or shorter time, according to the case.

Corns and Bunions. — Blisters are troublesome enough to the pedestrian, but corns are a thousand times worse. The former are only temporary evils, whilst the latter are a perpetual cause of discomfort and misery. Corns are of two kinds, hard and soft; and this distinction is not only dependent upon situation, as some people imagine, for the essence and even the cause of a soft corn are entirely different and distinct from those producing the hard variety. The soft corn occurs only between the toes, and partakes more of a warty character than of that of the true corn. There is really a growth of the cutis or true skin, which shoots up some little sprouts covered with a cheesy matter, and these become exquisitely painful if pressed upon by the adjoining toe. On the other hand, the true or hard corn is simply an effort of nature to protect a part unduly pressed upon; but the effort is carried to an inordinate extent. It is an over secretion or formation of cuticle, which, as it becomes thicker and harder, is again pressed into the inflamed cutis by the shoe, and thus, by acting as a foreign body, aggravates the mischief, and causes it also to react on itself, by increasing the already inordinate secretion of cuticle. Thus these causes act and react on each other, till you often find a deep process or processes of hardened cuticle driven into the skin, forming what are often called by the corn-cutter the root or roots of the corn. But it must be understood that these do not grow first, but are the last results of a very obstinate and long-standing mischief. In all cases the corn has, first of all, no root whatever; its growth is not from within outwards, but from without inwards; and the term "root" therefore is misapplied. Many tricks are played upon the credulous patients of the corn-cutter, by passing off pieces of quill, or nail, or horn, as extracted from the corn, and often a fee is charged for each root removed. I have known thirty-six guineas charged for as many "roots" extracted at one sitting, and paid too, for an operation which has afforded only present relief.

Bunions are different in appearance and character from either hard or soft corns; they are often caused by pressure, but in them the skin is not the seat of the inflammation, but the synovial bag on the inner side of the ball of the great toe, or sometimes on the outer side of the middle of the foot, or on the instep. In all cases they are soft, pulpy, bag-like projections, often, though not always, without hardness or roughness of skin. They are attended with great pain and tenderness, and cause considerable lameness.

Soft corns should be treated as follows: —With the nail pick off as much of the cheesy matter as can be removed; then, if the next day can be given up, apply a piece of lunar caustic to the surface, rubbing it pretty well in, but avoiding contact with the adjoining skin. After this keep a piece of carded cotton between the toes night and day, and it will be found that after twenty-four hours' rest all pain will have disappeared, the surface will have lost its moisture, and will have became hard, black, and dry. If the cotton is renewed daily this state of ease will be maintained for a week or ten days; but then it is necessary to pick off the blackened

surface and re-apply the caustic, again using the carded cotton. This second application will probably last a fortnight, but by that time the edges of the blackened cuticle become loose, and the application should be repeated; but not, in all probability, till three weeks have elapsed. In this way, by three or four applications, the most obstinate and painful soft corns yield to treatment, and become permanently cured; but the skin between the toes should be kept constantly washed and rubbed with a soft towel, so as to remove every particle of secretion daily.

With hard corns, nothing will effect a cure unless the pressure which has caused them is discontinued. In that case they require very little treatment; but if it is continued—as it must be when they occur on the sole of the foot—the only remedies are palliative, and require constant and careful repetition. Corn-cutters are constantly holding out certain hopes of a cure; but this is a fraud upon the unwary, and only leads to the picking of their pockets. It is quite true that a skilful corn-cutter will remove, without pain, every vestige of a corn, and will give instant and entire relief; but this only lasts for a fortnight or three weeks, the time varying according to the rapidity of growth in each particular case. Any one, however, who has the use of his hands may readily treat his own corns, if he will attend to the following directions:—In the first place, the cuticle should never be allowed to grow to such a degree as to occasion pain; it should be carefully removed before that time, and the best instrument for its removal is a pair of nail-scissors; with these a small piece of the thickened cuticle should be caught hold of *and raised from its bed at the same time*, then gradually closing the blades, it is removed without any great pain; for if much is given, it is only necessary to raise the scissors still more, and, as it were, drag the corn out of its bed, when the pain ceases, and the excision of that portion is effected. After removing this small slice, another adjoining slice is to be taken hold of and removed in the same way, till all vestige of the hardened cuticle is gone; after which the part may either be covered with a piece of wash-leather spread with soap-plaster, or left to its fate. The former is of course the better plan; but, if the corn is removed as often and as fast as it grows, there is no necessity for adopting it. On the sole of the foot the scissors cannot be used, and this is the most unmanageable situation by far. It is almost impossible for the sufferer to cut these himself, either with a knife or scissors; and he should remove them either, when dry, with a piece of coarse sand-paper fixed on a rounded surface, or, when soaked, with a piece of pumicestone. This treatment will suffice for corns which are troublesome while training; but when rest can be given they should be removed either with caustic, as described for the soft corn, or with tincture of iodine applied with a paint-brush. In either case the cuticle should be first pared down, and then one or other of the above remedies should be applied; but the inflammation, especially after the second application, is considerable, and rest must generally be given. Both are therefore inadmissible in training.

Bunions should have two or three leeches applied to them every other day for a week, after which the bunions may be left alone till the bites are well, and then they should be brushed with tincture of iodine every third day. This treatment will generally suffice, but not in very obstinate cases. Such cases, however, are seldom adapted for training, and therefore are not within my province.

Boils.—These are an effort of nature to get rid of a dead piece of cellular membrane by means of inflammatory action. In consequence of some peculiar condition of the blood, of the exact nature of which little is known, a death (or sloughing, as it is called) of a portion of cellular membrane takes place close under the true skin; to remove this foreign body nature sets up an inflammation, which is invariably of a slow and congestive character. It appears as if the poisonous nature of the slough irritates the surrounding parts to such a degree as in some measure to interfere with the process of absorption, and, consequently, a painful and hardened circle of swelled and reddened skin is formed around the dead cell. In most cases the thickening is so great as to stop the circulation in the interior of the circle and the boil remains stationary for a long time. The only remedy for this condition is either the application of some stimulating greasy

application, such as a linseed poultice, or the division by means of the knife. Either of these remedies more or less speedily puts an end to the inactive condition, and then a healthy suppuration goes on to remove the cell, and by throwing up fresh granulations, as they are called, to restore what has been removed. Such is the nature and ordinary treatment of a boil; but in training it is almost impossible to bear the use of the knife, if the boil is on any part which is subjected to much friction. In other situations it may be used, but when a boil occurs on the seat of the rower, as is so often the case, if the knife is used, at least a week or ten days must be lost before the patient can expose the raw surface to the friction of the thwart. Here, therefore, the best plan is to apply a plaster, spread on leather, and composed of equal parts of mercurial and opiate plaster. This stimulates and relaxes the inflamed vessels, and the opiate relieves the pain to a great degree; but even this is only a partial remedy, as without rest it is impossible entirely to relieve boils. To those who are known to be subject to boils I would recommend, as a preventive, the use of a wash of nitrate of silver of the strength of 15 to 20 grains to the ounce. This should be painted over the part every night, and will, of course, turn it more or less black, but it seems to give tone to the vessels, and to prevent that low and congestive state which precedes the death of the cellular membrane; at all events it prevents the formation of boils.

Hernia or Rupture is a mechanical protrusion of a portion of intestine, and, in the ordinary way, may be either at the navel or at the groin. Wherever it is, it requires the constant use (by day only) of a truss; and all that is required is, that the instrument should be exactly adapted to the part which it has to perform. A rupture may be generally distinguished from other tumours, even by an unskilled person, if the hand is placed upon it during the act of coughing. At the moment when the cough is heard, a strong impulse will be given to the hand, and the hernia will for a moment appear much harder and somewhat larger. This peculiar sensation can scarcely be mistaken, and the sufferer should at once proceed to a good surgical instrument-maker, for the purpose of being fitted with a good truss. If he is not already in a position to make a selection from the many who profess to make perfectly-fitting trusses, he had better ask his usual professional attendant to advise him, and it is more especially necessary in the country; but if in London, he cannot do better than submit himself to Mr. Cole of Charing-Cross, whose trusses are at once the simplest and the most efficient by far of all those with which I am acquainted. They have all the advantages of those so long patented by Salmon and Ody, without their disadvantages, and the only drawback is their price. However, I would strongly advise all those who suffer from this accident to apply to him, if they can muster the necessary sum, as the truss is exceedingly well adapted for all manly exercises, being light and yielding, yet strong enough to bear the most violent strain. Many plans have been propounded for trusses without springs, but they are very inefficient in all cases, and wholly unsuited to our present purpose — viz. that of retaining a rupture in its position during violent action of the body, yet without impeding that action.

Hæmorrhoids, or as they are commonly called, Piles, are very often exceedingly troublesome in training; they are generally symptomatic of congestion of the liver, and are relieved by those measures which remove that condition. The reason for this is obvious—the veins which return the blood to the heart from the lower bowels pass through the liver in their way, and consequently, whatever impedes the passage of the blood through them has a tendency to produce the effect on the hæmorrhoidal veins. Hæmorrhoids are, in fact, varicose veins in the rectum, sometimes bleeding in consequence of their walls giving way; they are also divided into external and internal piles—the distinction, however, being only one of situation. It will be unnecessary for me to describe the appearance of these troublesome little swellings, as they are so exceedingly common as to be well known to almost every one. In their treatment three points are to be attended to—first, to unload the liver; secondly, to prevent mechanical irritation by the presence and passage of solid fæces; and thirdly, to allay the inflammation already exist-

ing by local remedies. The first and second of these objects may generally be combined, but in very badly congestive states of the liver a dose or two of blue pill must be given in addition to this remedy. It should be avoided, however, if possible, as its *immediate* effect is rather to aggravate than to allay the local irritation. Generally speaking, the following remedy will be the best, acting in the double capacity which I have alluded to :—Take of best Turkey rhubarb, powdered, from eight to fifteen grains, ipecacuanha one grain, mix with water into two or three pills, and take with morning meal. The quantity of rhubarb should be increased or diminished so as to keep the bowels gently moved every day. The great point is to take the pills with a full meal, and to take them regularly every day at such an hour as to produce a motion in the evening, just before bedtime. When the bowels are usually sufficiently relaxed, but the piles are still painful, then give five grains of the confection of black pepper, with an equal quantity of common pitch, night and morning, made into two pills. As a local remedy, when the irritation is great and recently come on, the use of very hot water with a sponge to the part, two or three times a day, will afford great relief. This should be followed by the application of a little of the following ointment :—Take of gallic acid and finely powdered opium, of each, one drachm ; ointment of acetate of lead, an ounce and a half. When the piles are of long standing these remedies may be used ; but, in addition, four ounces of cold water should be thrown up into the rectum immediafely before each time that the bowels act. By these methods of treatment piles may almost always be relieved, and generally cured : but on the recurrence of disordered liver, they will be sure to reappear, and, therefore, that condition must be guarded against.

Acute Rheumatism is quite incompatible with training, and its treatment need not therefore enter into our present inquiry. Chronic rheumatism, on the other hand, is constantly interfering with severe work, and its attacks are anxiously to be avoided. It may be divided into muscular rheumatism and the rheumatism of joints ; the former shows itself by the occurrence of pain, often very severe, on the slightest movement, or attempt at movement even, of the particular muscle or muscles attacked, which again are generally quite free from pain while quiescent. On pressing upon the muscles attacked, great pain and soreness occur, and the seat of the disease may in this way generally be discovered ; on the other hand, when in the ligaments around the joints, it requires the joint itself to be moved, either actively or passively, before pain is experienced. Thus, supposing there to be rheumatism of the arm, if the upper and lower arms are firmly grasped so as to fix the elbow, and the patient is told to attempt to bend the elbow, if muscular rheumatism is present he will give himself even more pain than usual ; but if the joint only is affected, no pain, or much less than usual will be felt. During training, whenever rheumatism is so severe as to require internal medicine, the disease is of such a nature as to demand rest ; but it often happens that local remedies will suffice, and this is particularly the case with muscular rheumatism. It is generally in those muscles which are more particularly called into play by the nature of the exercise that rheumatism shows itself, and every time exercise is taken the rheumatic condition only goes off during use, to return with increased activity after a rest. In all these cases prevention is better than cure, and all unnecessary exposure of the body should be avoided, especially if in cold or wet weather.

Flannel should be worn next the skin during the day, and after stripping, as in rowing and running, the coat should be put on again without delay. As a local remedy, one of the following may be tried, and I give them in the order of their severity, beginning with the most mild. First, take of tincture of capsicum half an ounce, spirits of camphor one ounce, tincture of arnica one drachm ; mix : on using it, add an equal quantity of hot brandy, and rub the part affected for a quarter of an hour. Secondly, take of liquor ammoniæ, spirits of turpentine, laudanum, and neats-foot oil, equal parts ; mix, and rub in before a good fire twice a day. These remedies will often allay any muscular rheumatism which may occur in training, and I have even known rheumatism, when attacking the joints,

subside on the use of the last-mentioned application. As I before said, more severe remedies are incompatible with training.

Varicose Veins.—By this term is meant an enlargement of the veins, generally of the leg, accompanied by a breaking down or insufficiency of the valves which are situated at short intervals along the course, so that the veins bulge out in places, and become much more tortuous than usual. The disease appears to depend upon some natural or rather congenital weakness in the structure of the coats of the veins; at all events, we know no other cause. Many families are quite exempt, whilst others, again, are almost in every case predisposed to their occurrence. A radical cure may often be effected by the surgeon, but it is not unattended with danger. Still few of those who suffer from them are capable of going through severe work while afflicted in this way, and therefore, in most cases, either the operation must be done, or all severe training must be abandoned.

As a palliative measure, the elastic stocking may be tried, but the heat of the part is so much increased by its use that few people wear it without suffering material inconvenience. In spite of the pain and danger of the operation, I confess that were I subject to varicose veins I should encounter both without a moment's hesitation. In some cases a thin slip of elastic band, about a quarter of an inch wide, may be worn with effect. It should be applied spirally from the top to the bottom of the leg at about two inches interval. This is not so hot as the stocking, and in mild cases acts equally well.

Chapped Hands.—In cold weather rowers are sometimes terribly annoyed by their hands and arms becoming chapped, often to such a degree as to cause them to bleed; and pedestrians often suffer in the same way about the hands, wrists, arms, and behind the knees. For this state there is no remedy to be compared with glycerine, which should be freely smeared over the whole surface which is chapped, by means of a brush or feather. The application may be made night and morning.

YAWL.

PART II.

RACING IN ALL ITS BRANCHES.

BOOK VIII.—AQUATICS, OR RACING IN YACHTS AND BOATS.

CHAPTER I.

YACHTS AND YACHT SAILING.

Sect. 1.—General Remarks.

No pastime has made more rapid progress during the present century than that of yachting. In the "Waterloo year," when the Royal Yacht Squadron was established, the fifty noblemen and gentlemen who enrolled their names on the yacht list at Cowes represented the yachting community of the whole world. Sixty years have brought about a very different state of things; and so rapid has been the dissemination of a taste for yachting, that the number of pleasure vessels that now fly the British flag exceeds two thousand, with an aggregate tonnage of ninety thousand tons, representing a money value of 2,250,000*l*. These yachts give employment to about 4,000 seamen during the summer months; and it is no exaggeration to say that for seamanship and general smartness the British yacht sailor is without equal.

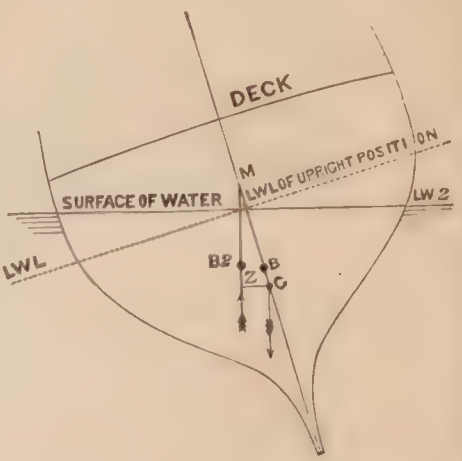
The only other nation that has developed a taste for yachting in any considerable degree is the great Anglo-Saxon family across the Atlantic; and although the Americans have not made so popular a pastime as the inhabitants of the mother-country have, there is no denying that they have done much to improve the character of yachts, as will hereafter be further alluded to.

Sect. 2.—The Form of the Yacht's Hull.

Down to the year 1840 the full bow and lean run—known as the cod's-head and mackerel-tail type—was fully believed in; but the success of a boat built at Poole with a more wedge-shaped entrance, gradually brought about a revolution in yacht designing. The rather flat floor gave way to greater dead rise and depth; the full bow was supplanted by a long clean entrance, and the after-body, whilst showing a much fuller buttock line, had easier horizontal lines. This form of hull of course was very unstable, before ballasting; but when ballasted it became, owing to the depth at which the ballast could be stowed, much more stable than the flatter-floored and broader-beamed boats that had been so long in fashion. About the same time the Americans began to make departures from what had hitherto been considered the only orthodox form of hull for speed. They did not, however, follow the lead of the English builders,

but struck out on a line of their own. They retained the small midship section of the cod's-head school, but changed ends with the model; that is, the bow was made long and extremely fine; and the quarters, or run, comparatively short and full; and instead of giving depth, in order to get a large quantity of ballast into an effective position for giving the required stability, they added to beam, cut away the displacement as much as possible, to keep a high centre of buoyancy, and in this way obtained the necessary sail-carrying power.

As the nature of the forces on which stability depends is not generally understood, a short exposition of them will be of service to those who wish to make their knowledge of yachting as thorough as possible. The two forces that are at work to keep a vessel upright in the water are those of gravity and buoyancy. Buoyancy is the force exercised by the water in striving to regain its position when displaced by the hull of the vessel; and it acts through a point known as the centre of buoyancy, or centre of gravity of displacement; that is, in simpler language, the centre of buoyancy is the centre of the cavity made by the vessel in the water. Gravity is the downward pressure of the weight of the vessel acting through its centre; and thus the "centre of gravity" is that point in a vessel at which she would be exactly balanced if she were suspended therefrom; and it thus is the common centre of gravity of all the weight of the ship and any weight that she carries. This centre of gravity is of course a stationary point so long as none of the weights are shifted; but the centre of buoyancy may be continually shifted by the heeling of the ship. On this latter condition depends the righting force. When a ship is in equilibrium, the centre of gravity and centre of buoyancy are necessarily in the same vertical line. Upon heeling over, the centre of buoyancy is shifted laterally towards the side pressed down in the water, and the distance between the new centre of buoyancy and the centre of gravity becomes a coupling lever acted upon by two forces which exactly balance each other; *i.e.* the weight of the water displaced exactly equals the weight of the ship. For example: Let B be the centre of buoyancy of a vessel in the upright position, and B2 the centre of buoyancy when the vessel is inclined to an angle of say 18°; then a line through B2 at right angles to the new water-line, LW2, will cut the middle vertical line of the vessel at the point M, and M is the metacentre. G is the centre of gravity of



the weight of the vessel, her stores, cargo, &c. Through this point, G, let fall a perpendicular, parallel to B2 M; then the distance between B2 M and the line drawn through G, represented by the line G Z, will be the length of the righting lever, the weight of the water displaced acting upon it upwards through the centre of buoyancy, B2, and the weight of the ship acting downwards through its centre of gravity, G. Thus the righting moment of the vessel so heeled would be her weight in tons multiplied by the distance G Z, or the righting moment in technical expression = W × G Z. But as G Z = M G sin θ; therefore the expression for statical stability is generally written W × M G, sin θ. When the point M comes below G, it is obvious that the forces would be tending to upset the vessel, and in fact she would capsize.

By the aid of this illustration it will be easily seen that the lever G Z can be increased in length for any given angle of heel, either by bringing about a lower situation of the centre of gravity, G; or by getting the centre of buoyancy, B2, farther over to leeward. The centre of gravity can be readily got lower by ballasting with such contrivances as lead keels, or by so forming the bottom of the vessel as to take inside ballast very low down. The point B2 can be made to shift more

THE CAMBRIA.

rapidly towards the immersed side by increasing the beam and very much cutting away the hull immediately below the load-water-line, so that the piece of the vessel put into the water upon her being heeled is greatly in excess of that which is taken out on the opposite side.

At small angles of inclination the shallow type of vessel has the greater stability, as the narrow and deep type has to be heeled to a very considerable angle before the centre of buoyancy and centre of gravity get much separated. But although the shallow, broad type has the greatest initial stability, its power vanishes very rapidly when the deck becomes immersed; whereas a deep vessel with a low centre of gravity retains great righting power until far beyond her beam-ends. In short, it is impossible to upset a yacht built and ballasted as an English cutter is; but the broad shallow vessels of America, if pressed much beyond their deck edge, might easily be capsized. An example of this danger to which shallow yachts are exposed was given in New York in 1876 when the *Mohawk*, a yacht over 130 ft. in length and 30 ft. in breadth, was capsized and sunk in a squall whilst lying at anchor with her sails set.

The advantages of the shallow type of vessel are, that, owing to their great initial stability, they can carry an enormous area of canvas in a moderate breeze, and keep comparatively upright; and as their displacement is small, the resistance they meet with from this cause is much reduced. The advantages of the narrow and deep type are, great power to carry sail in strong winds; and although they readily heel to the pressure of the wind, they still attain great speed, as, owing to their narrowness, their fore and aft lines are extremely fine, even when the vessels are much inclined. A large displacement of course enables them to carry a large quantity of ballast, and at the same time leaves great room for cabin accommodation, of which many of the shallow vessels are deficient.

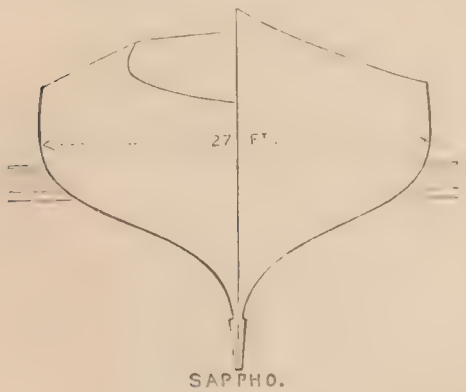
A vessel of great beam, very much cut away under the water-line, will have a normal tendency to make leeway; and to counteract this force of the wind acting perpendicularly on the plane of the sails, a keel is resorted to. This keel gives the lateral resistance necessary to prevent leeway, but is only effectual proportionately to the upright position maintained by the vessel. A keel of wood, however deep, gives no stability: in fact, it is so much instability, as the effort of the wood will be to come to the surface. An English yacht obtains this lateral resistance in a great degree by the form of hull—it having great rise of floor, and often a good depth of dead wood in the way of a fixed keel besides.

Of late years it has been very much the aim of builders in England to combine the shallow and deep form, and Mr. M. Ratsey of Cowes has greatly succeeded in this in such vessels as the *Cambria*, *Vanguard*, *Corinne*, *Vol-au-vent*, *Kriemhilda*, &c. Mr. Fyfe of Fairlie is perhaps the present exponent of the narrow and deep type of vessel; and so far his vessels hold their own with the lighter displacement boats built at Cowes.

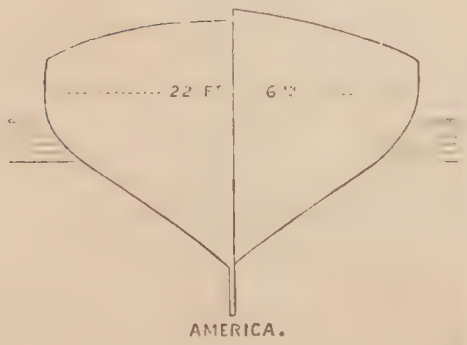
There is very little to choose, so far as excellence goes, in the models now in vogue in the British yards, and to the unpractised eye they will bear a strong family likeness. However, from the naval architect's point of view, there is a great variation in the forms of the vessels built by Ratsey, Fyfe, Nicholson, and Harvey—the most noted builders of racing vessels and fast cruisers. Harvey and Ratsey each strive for a high centre of buoyancy and low centre of gravity by making the floors of the vessels they build as hollow as possible; and yet the models they adopt are very dissimilar. Ratsey in the after-body retains the form of the midship section right away to the transom, or, if anything, the frames get flatter towards the stern. The consequence is that the vessels have a full load-line aft, but a very easy and straight buttock line. Harvey's vessels, on the contrary, have straighter or sharper frames as the stern is approached, and the result is a fine level water-section, or load-line, aft, and a fuller buttock line. Both Nicholson and Fyfe give a larger area of midship section than either Ratsey or Harvey, and generally more displacement and fuller body aft, with full buttock-line and pretty easy load-line. A closer resemblance is to be observed in the forebodies of the vessels constructed

by the builders named, and, so far as "bows" are concerned, there does not appear to be any great need or scope for experiment. The angle made by the entrance of a vessel is usually about 31° or 30°, but the wedge formed by the bow or entrance is given more or less hollow according to fancy or judgment. The advantage of the very hollow bow, however, appears to rest chiefly on theoretical reasoning; and some of the most noted flyers present almost a straight load line forward. In fact the differences in hull, even such as are patent to the eye, can less often be held accountable for variations in the speed of different vessels than ballasting, canvasing, and handling. As a rule, those vessels are the most successful that are the stiffest; and it is highly important that yachtsmen at the outset should understand what conditions are necessary to ensure stiffness.

The accompanying diagrams of the mid-ship-section of different vessels will illustrate the peculiarities pointed out. It may be stated, however, that the



SAPPHO.



AMERICA.

Sappho is not a fair representation of the modern American shallow type of vessel, and moreover, she depends largely upon ballast for stability, having as much as 80 tons stowed in her hull. Besides this, she has a fixed deep false keel; and, excepting that she has a more hollow floor and finer after-runs, she in many respects may be termed an Anglicized vessel.

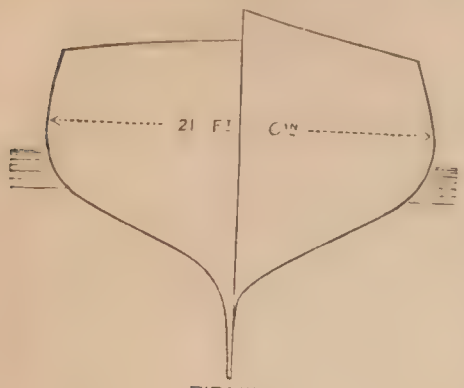
Sect. 3.—Sails and Rigging.

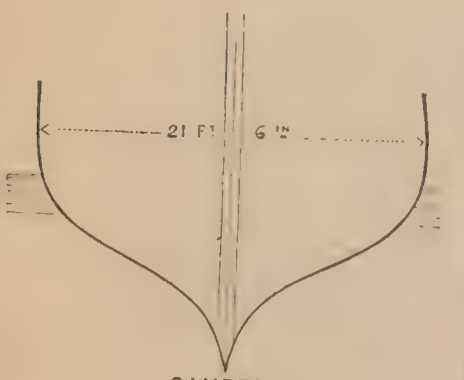
With regard to canvasing it may be said that the sailmakers do their part of the work well, and if an owner is willing to have a new suit of sails every two or three seasons his vessel will never suffer from the lack of a perfect medium of propulsion.

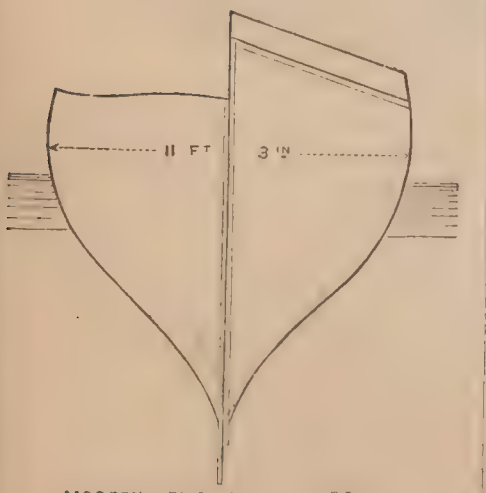
After a good model, well ballasted and canvased, is put in the water, there is still the "handling" to consider. A yacht is not like a greyhound, and cannot win by herself; and many a yacht that has been condemned as a racer has afterwards, on changing hands, turned out a perfect flyer and beaten all comers.

The most general failing of racing skippers is lack of observation. They of course always know their duty, and handle their vessels cleverly and safely. They learn to do all this by long training; but something more is required of the racing skipper than mere expertness in taking a vessel about. He should be able to observe at once how best his vessel likes to be canvased and her sails trimmed under particular circumstances; and if he learns her peculiarities, so much the better, as he will be more certain in his management. The peculiarities of a vessel are most apparent and require to be humoured most when she is close-hauled. In sailing to windward, a vessel not only requires her sails to be very carefully trimmed, but she must be "ruddered" with equal care. Five minutes of careless steering on a wind may put a craft hopelessly out of a race, and "watching the wind" is as much an art to be studied as that of trimming and setting sails. Of course there are other influences to regard in sailing a vessel in matches, such as tides, currents, and probable variations of wind; but these influences have nothing to do with the speed and qualities of a vessel *per se*, and a yachtsman will soon know how far his vessel's success or failure rests with the builder or the person engaged to sail her. No kind of competitions are so uncertain, so flattering,

and so disappointing in their results, as yacht-matches; and any one inexperienced in match-sailing would fail to realize the mental excitement that a yacht-match induces in those who





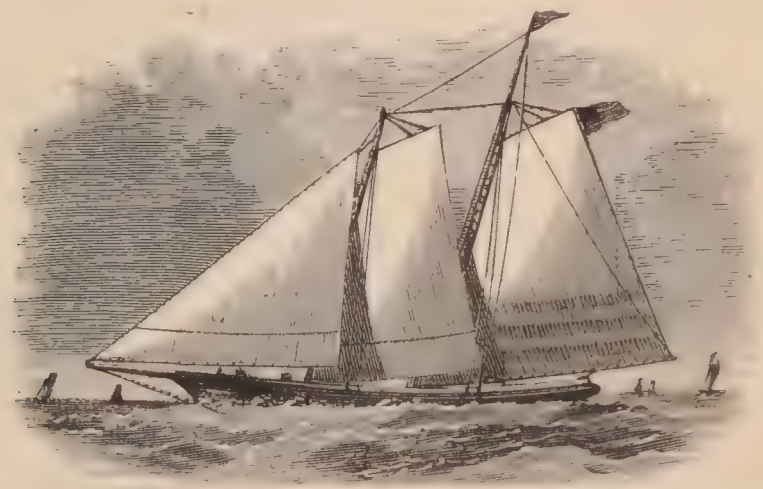


have a taste for the sport. The accomplishment of yacht building and yacht sailing has been described as "a science in theory and an art in practice;" and doubtless it is the almost unlimited theorising which yacht designing will admit of, and the perpetually changing features of yacht-sailing, that keep yachtsmen steadfast in a pursuit which to the uninitiated is nothing but an incomprehensible mania.

It would be useless to attempt, in the limited space allotted to this article, to go into the subject of "centre of effort" of sails, cutting them out, &c. The reader is referred to Kipping's treatise on "Yacht-Designing" published by Mr. Horace Cox. The diagram given in a subsequent page will perhaps, however, teach the young yachtsman as much as he may desire to know. It should be observed that all the parts of a cutter's sails are similar to those of a schooner; and by taking away the foremast, fore-sail, and fore-topsail of the schooner, the diagram will illustrate the exact rig of a cutter. A yawl, as will be seen by the woodcut on page 609, is rigged like a cutter, with the addition of a small mizen mast.

Schooners formerly were, without exception, rigged with a standing bowsprit and jibboom; but with the advent of the *America* it was seen that our schooners had, by reason of their form of hull, cut of canvas, and style of rig, such indifferent weatherly qualities, that their whole form underwent a change. The *America* was at first industriously copied. Her rig, as shown in the annexed woodcut, was very simple, and the sails presented an uninterrupted flat surface, instead of a lot of small and bellying pieces of canvas. But it was found that in weatherly qualities even she was inferior to English cutters, and builders accordingly ceased to model farther after the *America*, and set about making schooners as much like cutters as possible, always remembering the flat sails, the advantages of which had been unmistakably proved by the Americans. The broad and comparatively shallow hull gave way in turn to sharp bottoms, less beam, and a great deal of lead both in the bottom of the hull and on the keel. The rig forward also changed, from the bumpkin bowsprit and one head sail, to a long running bowsprit and full-sized flat jib. It is just possible that the *Wildfire* cutter, of 59 tons, that was very successfully changed into a schooner in 1858, and called a "double cutter,"

set this example of hull and rig. At any rate, the *Aline*, of 216 tons, came out in the following year, and her superiority over all other schooners down to the time of the *Cambria* finally settled the advantage that had been gained for weatherly qualities. It is believed that our schooners are now as much superior to those of America in this respect as the famous American yacht of 1851 was at that date superior to ours; but it must be admitted that the shallow type of hull has been carried to an extreme extent in America, and they seem to have departed altogether from that compactness of rig of which the *America* was so excellent an example. As before explained, the *Sappho* partakes too much of the English type of vessel for the purpose of deciding the value and merits of the extreme models of the two nations we have referred to. So far as the contests between the *Cambria* and *Livonia* and the American yachts went, the conclusion arrived at was that in light winds and when sailing off the wind the American yachts were much the faster; in sailing to windward in light winds the advantage was not so marked. In a strong breeze taking length for length the two English yachts were vastly superior to the American centre boarders and carried their canvas bravely whilst the American yachts had to reduce theirs considerably.



THE "AMERICA."

Sect. 4.—The General Management of a Yacht, Cost, &c.

There is no doubt that a man who has had early training in small sailing boats on the coast will have advantages over one who only takes to yachting late in life. The latter, even provided he is not afflicted by sea-sickness, will, with rare exceptions, never acquire that practical readiness of using nautical knowledge and that seamanlike bearing which are the characteristics of a yachtsman who has been familiar with the sea from childhood. Still a great deal can be learnt even in one summer's yachting, and if a man takes to it, no matter how late in life, from the influence of a taste that way, and not merely because yachting is a fashion, there is no doubt he will very soon become a first-rate yachtsman, although he will not be capable of sailing his own vessel after one season's experience alone. The best way to arrive at excellence in yachting is that which leads to success in all pursuits, and consists in not trying to accomplish too much at first. If a wish exists to possess a racing yacht it is not advisable to go straight to a builder and order one before having acquired any experience at all in the sport. A man may not even know if he will probably like yachting; and if he commences with a large outlay and total inexperience, great disappointment may be the result. First discover how far the sport accords with natural tastes, and gain some experience. To accomplish this, hire a yacht for the season, or purchase one, never mind

whether she be very fast or not, so long as she is seaworthy, and worth the money asked for her, and get some reliable friend who is a yachtsman, as a coach on board.

THE SIZE OF THE YACHT bought will of course be regulated by the buyer's means for supporting her; and the best plan is, if an inclination to build prevails, to begin in a smaller vessel than it is intended to have at some future date. There are no means for schooling embryo yachtsmen like boats from five to twenty tons; and any one who gets thoroughly accustomed to these will certainly be at home in a large vessel, although a man who has only been used to the latter might cut a very poor figure in a boat of ten tons. Indeed, a man who late in life commences his career afloat in a yacht of two hundred tons, would scarcely ever become practically acquainted with the working of his vessel and capable to undertake the handling her; the responsibility of such a thing would seem to him at the outset to be so great, that he might very naturally abstain from any thought of such an undertaking; but no young man, I imagine, could very well go through the mixed pleasures and discomforts of a ten-tonner without becoming a thorough adept in the art of fore-and-aft sailing. The advice therefore is, to young men, if they have the means to "go in" for yachting, to commence in a small way; if they grow to really like the adventure of being afloat in a cutter forty feet by eight, they will soon be capable of forming their own opinion as to what a vessel should be to combine as near as possible such advantages as are in accordance with a formed taste and judgment.

AS TO PURCHASING A YACHT, it is almost useless to give suggestions to a man who, perhaps, has never been on board one in his life. The best advice to give is none at all, as in nine cases out of ten an inexperienced person who suddenly primed himself with hints as to examining a vessel's bottom, timbers, spars and rigging, would much more likely be imposed upon if he attempted to rely solely on a judgment so formed, than one who went with confidence to a first-rate builder, such as Nicholson of Gosport, White or Ratsey of Cowes, and many others, who generally have a number of second-hand yachts for sale at from 20*l.* to 30*l.* per ton.

If the intending purchaser has no practical yachting friend to advise him in buying a yacht, he will probably have none to counsel with in the selection of a captain and crew; and here again I must advise him to trust to a builder. If ten tons be the size of the yacht, get some man who has been mate of a larger vessel to take charge, and allow him to pick the other hands; the builder of whom the yacht is bought will probably know of a good man to take charge, and his recommendation must be trusted to.

Having obtained a yacht and crew as limited in size and number as alluded to, go to work steadily at first, and do not be too anxious to get out in a "duster." Take initiative lessons in light breezes and smooth water; have the "Manual of Yacht and Boat Sailing" as a companion, and master its contents when the vessel is under way. Become acquainted with the names and uses of every part of the boat's "belongings," whether it relates to her hull, spars, rigging, or sails; and be not slow to assist, in however small a way at first, in the working of her. This kind of practical schooling beats hollow all the knowledge that can be gained from treatises; and no work that could be written on the sailing of a vessel would be of real use without the assistance of practical tuition. When the beginner knows how to get under way, and can tell by watching the vane how the vessel will lie for the point that has to be reached, he may consider himself a "yachtsman" who only requires a more extended experience to blossom into an accomplished seaman. But do not confine acquirements to a mere knowledge of working a vessel on or off a wind, but go in for the higher branches of sailing. If disinclination to take lessons from a teacher of navigation exists, get the "Yachtsman's Handy Book," and when this is thoroughly understood, a great deal more will have been acquired than the majority of yacht-masters understand.

THE CRUISING YACHT.—It may happen—indeed, it is often the case,—that a gentleman takes to yachting solely on account of his health, and never desires to be anything more than a passenger on board his vessel,

and is quite innocent of an ambition to turn her into a racing yacht. His object will be comfort, and he should possess a yacht of not less than 100 tons and not more than 200. It must be presumed that this projective yachtsman has no yachting friend whose advice is available to assist him in purchasing a vessel. An advertisement would be sure to bring forth numerous replies from yacht agents, and perhaps from owners themselves; but as before stated, I think the safest plan will always be to apply direct to a builder of good repute. A well-found schooner of 150 tons, and ten years old, oak framed and planked, copper fastened and bottomed, would probably fetch about 3,500*l*. Her sails, standing and running rigging, should be in good order, and fit to undergo two seasons' cruising, and the copper sheathing should not have seen more than three years' wear. Of course, any one who has had no experience whatever in these matters, will be unable to form an opinion as to the condition of a vessel's hull and gear, but at least he can get a guarantee from a builder, and he will not be long in discovering if he has been fairly dealt with or not. It is inadvisable for any one to buy an iron vessel; they are damp, in consequence of the humid sea air condensing on the iron sides; their bottoms corrode, and if one gets a hole in her bottom anywhere away from a "blacksmith's shop," it will be very difficult to get her repaired.

The yacht having been purchased, the next thing to do will be to select a master, and here the novice will meet with a fresh difficulty; there are always plenty of masters to be had, but a good one is not always obtainable at a moment's notice, especially if one knows nothing of the qualifications to be sought after. A gentleman who is fond of racing often puts up with an objectionable master, solely on account of his expertness and aptitude as a racing skipper; but for comfortable cruising, a smart, good-tempered, careful man is required, and not one who will rave and bustle and be perfectly indifferent about the look of his vessel, as long as her racing gear is new and good, and about the condition and character of his crew, so long as they are expert and ready for hard work in a long day's race. To get a good cruising master I do not know that any more can be done than take the usual precautions that are observed before engaging an ordinary servant. If you know anything, even by repute, of the owner a master has previously been employed by, you will be safe; but do not take any one without some recommendation as to character.

If it is pretty certain that a good man has been secured as master, leave the selection of the crew to him. Their wages probably will be, per week:—

	£.	s.	d.
Master	2	5	0
Mate	1	15	0
Steward and Cook each	1	10	0
Men each	1	4	0
Cook's mate	1	1	0

The men will find themselves in all stores excepting grog, which will only be served out to them after some extraordinary work, during very bad weather, and on Saturday nights to "drink to sweethearts and wives." The best plan is to give the master a case of rum, and allow him to serve it out at discretion.

It will be optional what clothes you give the men, but these are usual:—

	£	s.	c.
MASTER.			
One fine blue cloth suit and gilt buttons	4	4	0
One cloth cap and gold band	1	1	0
One silk neckerchief	0	6	0
One pair canvas shoes	0	7	6
One do. leather	0	10	0
MATE.			
One suit similar to captain's	3	17	6
One pair pilot trousers	1	1	0
One Jersey frock	0	10	6
One cap	0	7	6
One neckerchief	0	4	0
STEWARD.			
One blue cloth short-jacket suit, to wait at table	4	4	0
One suit of serge for marketing, &c.	3	3	0
Two pairs shoes	0	17	6
One neckerchief	0	4	0
COOK.			
Similar to the Steward.			
MEN.			
One pair each of pilot trousers	1	1	0
Two do. white duck	0	16	0
One Jersey frock	0	10	6
One man-of-war serge do.	0	8	6
Two white duck do.	0	12	0
One hat	0	5	0
One neckerchief	0	4	0
One white straw hat	0	4	0

A red cap (1*s.* 6*d.* each) for each of the crew, and two or three extra ones; also, ribands with name of yacht painted on them, for hats.

The usual number of hands carried by cruising yachts is one for every 15 tons, exclusive of master, mate, steward, cook, and cook's mate. The latter will cook for the men's mess and assist in deck work, if the master should require him so to do on an emergency.

The master, mate, and steward will mess together at the owner's expense, and the cook, as a matter of course, will do the same. Their table will be a plain one, with an allowance of a pint of beer per diem.

The men, excepting when they are doing deck work and their own jobs in early morning, should always appear clean and in trim by 10 A.M., and the master should never allow the gig's crew to go on shore unless they are properly dressed. It is not required here to speak of the discipline on board—a good master will see that this is not lax. If the owner wishes anything done on board he should always give his orders to the master, even on matters of a trivial character. Address the master as Mr. Brown, or King, as his name may be, and treat him with a certain amount of consequence, so as to give the crew a proper respect for his importance. When going on shore, if you forget to tell the master what time to send the gig for you, give the order to the coxswain, and do not shout out indiscriminately to the whole gig's crew. It will be the duty of the coxswain to repeat the hour after you, the same as all the master's and mate's orders are repeated on board.

Sect. 5.—Sailing a Yacht.

It cannot be expected that any treatise, however comprehensive, on the art of sailing, would make a man a practical seaman; much less can it be expected that one so limited as the present necessarily is would have such an advantage; still a beginner in any art will make more satisfactory progress if he has a few distinct hints on the subject under study apart from practical instruction. And moreover, in the matter of sailing, a man may desire to understand the working of his vessel without any ambition of taking part in her management when under way. To meet this desire, and to help the young gentleman whose wish it is to become a regular "salt," I shall proceed to give, in a cursory form, some particulars of the management of cutter yachts on all points of sailing; but I strongly advise no beginner to attempt to manage any sailing boat, however small, unless he has had a few practical lessons from some person who is perfect in the art.

As I have before said, nothing will go well on shipboard unless a regular system is observed; this is particularly necessary in getting under way and bringing up. It will soon be discovered that all the sails cannot go up together, and that to get them up at all without a hitch the practical seaman's rule and method must be followed. Begin by taking plenty of time for making sail, and, indeed, continue work without getting into a disorderly bustle; and the probability is, that if at any period it were found necessary to get under way, shift sail, or bring up with more than ordinary smartness, the hands will fall to more expeditiously than if they had endeavoured to hurry before they were properly acquainted with the working of the vessel.

Getting Under Way.—The first care will be to get all the sails ready for hoisting. Cast off the peak halyards from the gaff; take the coats off the mainsail and foresail, and then rehook the peak halyards to the gaff; cast off the gaskets or tyers, see them made into neat bundles, and, with the mainsail and foresail coats handed to the man below in the sail-room, now busy in passing up jib and topsail; overhaul the mainsheet, and then get a pull on the topping-lifts until the boom is topped well clear of everything on the quarter, and get the boom-crutch stowed in the sail-room; if the boom jams in the crutch, keep a hand to steady the latter as the boom is topped, or it might be seen going to the bottom; in a 10-tonner the boom could be lifted out, and the crutch secured before topping. The mainsail being now loosened, man the throat and peak halyards, and "hoist away," casting an eye as the sail goes up to see that "all's clear," that the peak downhaul is not belayed so as to impede hoisting, and that the gaff end goes the right side of the topping-lift, or, if

there are two, that it passes between the two. Be careful that the peak does not go up faster than the throat, but keep the gaff nearly at right angles with the mast, until the throat is up; then peak the sail; belay the halyards, sweat up the throat by the main halyard purchase, and the peak by the peak purchase. Haul the mainsheet taut until the boom is amidships, trice up the tack, and coil away the halyards, turning them over, when coiled just forward on either side of the mast.

Next get the topsail laced to the yard, if it be a square-headed one, and see that the halyards and sheets are ready for bending, taking care that the latter be not foul with the topping-lift; if the breeze is fresh or inclined to freshen, do not hurry to set the topsail, but wait until it is seen whether it will be wanted. If the yacht be a schooner, go to work next and set the foresail, hoisting the same as the mainsail; hook on the sheets and mouse the hooks; overhaul the foresheet purchases, so as to get as much drift as possible for hauling the sheets flat.

Now heave short upon the cable until the vessel is nearly over her anchor, or if riding to moorings, get all ready for slipping, noting that when the bridle is cast off, the rope and buoy attached to the fasts will go overboard all clear.

Slack up the foretopmast stay; heave down the bobstay, and then haul the topmast forward again; get a pull on the runners, but do not set them up "fiery taut."

Next get the jib tack hooked on to the traveller; reeve and bend the sheets; hook on the halyards, and see that the jib-purchase is overhauled. If it is intended to start directly, run the jib out and hoist away, keeping it in "stops;" sweat the jib well up, and let it remain stopped.

The fore-staysail, or as it is called in a cutter the foresail, will require attention next. Hook on the sheets, and haul in what will be the weather one, to make the vessel's head pay off when getting under way. Then hoist the sail, and bowse down the tack. Note that the jib and fore-staysail downhauls are bent.

Having looked round and seen the way out between the crowd of vessels, the next thing to do will be to trip the anchor, and as it is "heave and a-weigh"—that is, as it leaves the ground—slack out the mainsheet and put the helm up; burst out the jib and trim the sheet; and as her head pays off, steady the helm, let fly the weather foresheet, haul in the lee one; haul flat the mainsheet, and the vessel will be under way on a wind.

Watch the vessel's sailing closely, and continue to trim the sheets until she seems to be doing her best; then note how much sheet she likes, and remember it.

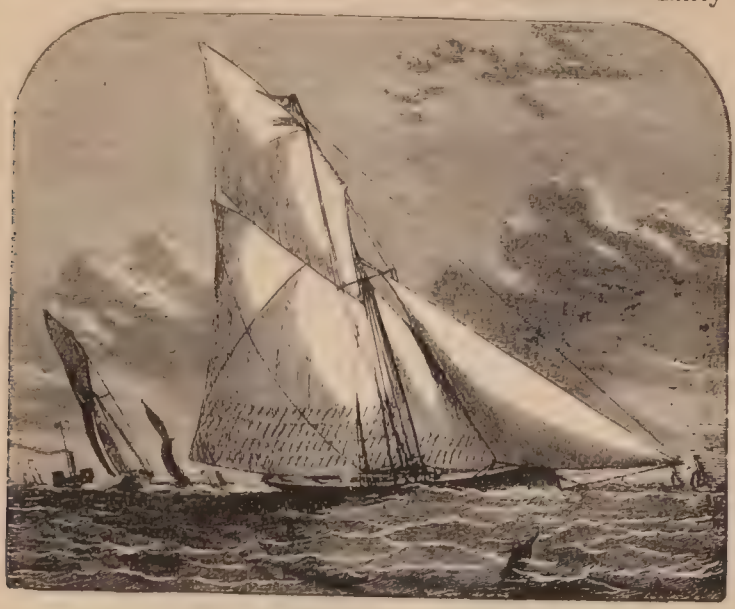
We will suppose that the yacht is now out clear of the roadstead, with a nice, steady, whole-sail breeze, just enough to carry a gaff topsail to windward in. It will therefore be time to see about setting the topsail. Bend on the halyards and sheet, and hoist away on the halyards; as the sail goes up, take a lacing and pass it through the tack thimble, and pass it round the fall of the main or peak halyards to serve as a jackstay and traveller, otherwise the sail will perhaps become unmanageable; then hook on the tack tackle, and haul on the sheet to get the slack in, or it will be very likely to take a turn round the gaff-end. When the yard is close up to the halyard-sheave, belay, get the tack well down, and heave out on the sheet until the sail appears as flat as it is possible to get it.

Let us now suppose the yacht to be working out of a channel, a mile wide and two long, after which she will be in the open sea and able to bear away round the "spit buoy" to shape her course along the coast.

If not perfectly acquainted with the channel, study the chart for half an hour before starting, and keep the lead going, to avoid getting soundings aboard. When you have stood in as far on the shore as would be safe, sing out "Ready about!" The response from the fore-deck will be, "All ready, sir." Then steadily put down the helm, and shout out, "Helm's a-lee!" As she comes up in the wind ease away the jib-sheet handsomely, keeping the fore-sheet belayed if the vessel be slow in stays, until her head begins to fall off on the other tack, then ease away. Haul in the lee jib-sheet and fore-sheet as the vessel is about to pay off smartly, and belay. Ease the helm until it is amidships, and overhaul the lee topping-lift fall, and haul taut the

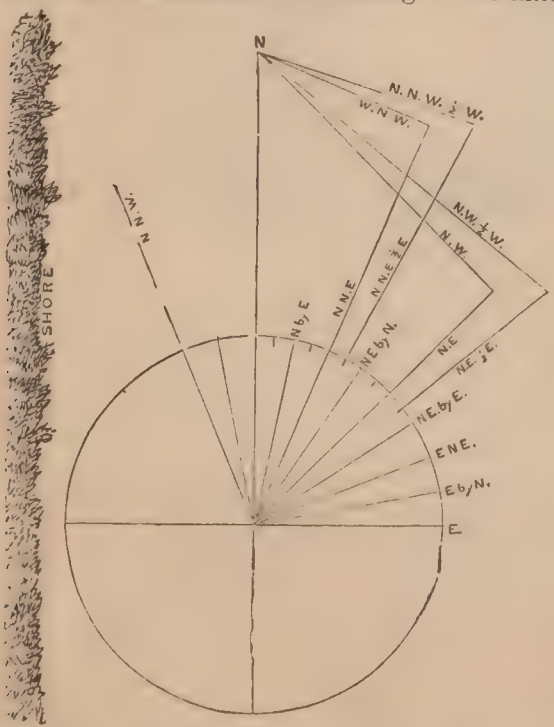
weather one. Whilst the vessel is up in the wind—before her head pays off—is a good time to get a pull on a purchase for setting up the sails, if necessary.

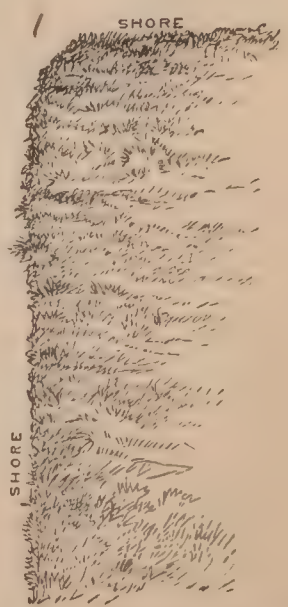
The vessel now is fairly under way



ENGLISH RACING YACHT ON A WIND.

again, and standing across for the other shore; she lays about four points from the wind, and as the wind is blowing straight up the Channel it is a dead beat. As she lays as near as four points, about two miles and three-quarters will have





to be made to get out, and the vessel will do it in two boards if there be room in the channel. All her sheets are properly trimmed, and she appears "full and bye," or, "on" the wind, as represented in the above woodcut.

Beating to Windward.—In order to understand more clearly the nature of beating to windward, reference may be made to the preceding diagram. We will presume the vessel to have started on the port tack from the centre of the circle, and that she has to arrive at the point marked N. due (compass) north, two miles distant; but as the wind is blowing direct from north, the vessel will only lay along the line marked N.E., which is four compass-points from N. When the sailing-master has judged that the vessel has arrived at a point—that is, when he has brought N. to bear exactly a-beam eight points from the direction of the vessel's head—from which she will lay on the other tack to N., the vessel will be put about and traverse the line N.W. If the wind were N.N.W., she would be able to arrive at N. by a "long leg and a short one," traversing the compass lines marked N.N.E. and W.N.W. A schooner will not lay so close by about half a point as a cutter, and to arrive at N. would have to traverse the lines showing their compass directions outside of those marked for the cutter. A cutter under whole canvas in smooth water should make no perceptible leeway, but any vessel, will of course, under all circumstances, be affected by

CUTTER BEFORE THE WIND.

tides and currents. These subjects, however, to be accurately understood will have to be patiently studied by the novice when he is studying Navigation, or at least they will only be mastered when he has acquired mature experience.

Bearing Away.—Having fetched the "spit buoy," or the point marked N., prepare to "bear away." Overhaul the lee runner tackle; put up the helm, and simultaneously ease up the jib, fore and main sheets, for a wind abaft the beam. If you are coming nearly dead before the wind as the cutters are represented in the above woodcut; ease up the main tack and topsail sheet a little. Have the weather topmast shifting backstay and tackle in readiness, hook the tackle on, and haul taut now. Watch the steering, and be careful not to get the vessel "by the lee," as a sudden gybe would not only be a lubberly but a very dangerous proceeding.

Setting the Spinnaker.—About twelve years since the spinnaker came into fashion, and, as it is an easier sail to handle than a squaresail, many cruising yachts carry one. First get the beam out; then bend on the halyards to the head cringle of the sail and the outhaul and inhaul to the tack cringle. Haul the sail up to the topmast head; then haul the sail out on the beam and sheet it. When taking in the sail the outhaul should be the first thing to let go, and the halyards

should not be touched until the sail is gathered in.

GYBING.—This is rather a hazardous operation with a crowd of canvas set. First clew up the topsail, and trice up the main tack if the wind be very strong; get ready to haul taut what will be the weather-runner, and to slack up the other; then see that one hand is ready, with the topmast shifting backstay tackle, and when all is ready smartly haul in the mainsheet and belay; at the same time steadily put the helm up until the wind is taking her on the other side; then hook on the backstay tackle and runner, and haul both taut before the boom goes over, if possible, and see that the slack of the mainsheet is all clear for running out again. If the wind be very light indeed, all such precautions of flattening in the mainsheet, tricing up the maintack, and clewing up the topsail, will be unnecessary; but never run the slightest risk, when you are in doubt about carrying away a topmast, gaff, or boom.

REEFING.—Always have in fresh breezes at least two reef-pendants rove, as there is no knowing how suddenly it may be necessary to get a reef down. We will suppose now that the wind has "shorted" on the vessel, and that she is again close hauled, and just able to lay her course, but with every promise of a dirty night.

First get the topsail down; send a man aloft to unreeve the lacing round the masthead, and clear the yard of the topping-lift; then lower away the halyards, ease up the sheet and haul down on the tack until the sail is on deck. Directly the sail is on deck, see about housing the topmast before the masthead-man comes down. This being accomplished, trice up the mainack, haul the weather foresheet to windward, and luff until the mainsail is haking. Then, the fourth jib being ot ready on deck, let the one set fly by casting off the traveller outhaul, nd lower away the halyards. Unhook ne halyards and the tack from the raveller, and hook on the smaller jib irectly and set it promptly, leaving it ith a slack sheet for the present. ext slack the mainsheet, top the oom, and flatten in the sheet again; ien lower away the main and peak lyards a trifle more than a reef, hook e reef tackle to the earing pendant, and haul in upon it a good strain. Then at once clear your tackle for another reef, in case it should be necessary; that is, put a racking on the earing whilst the tackle is unhooked, then take a turn or two round the boom with the pendant and stop it. Now tie the reef points, or haul down the lacing, as the case may be. After that, hoist away the throat and peak, haul down the tack, overhaul the topping-lifts, and put up the helm. Haul in the lee jib-sheet, and when she has paid off, let go the weather foresheet, and haul in the lee one.

If the vessel seems to have too much head sail, get two reefs down in the foresail; haul up the weather jib-sheet, and lower away the foresail halyards, hook a tackle on the reef thimble, tie the points, and then set the sail again.

It will be a great assistance to the vessel to have the bowsprit reefed now. To do this, cast off the falls of the top-mast stay and bowsprit shrouds, and ease up to the bobstay tackle; knock out the fid, set the bowsprit in by the shrouds, and make all fast again; then the jib will require bowsing up, and the slack of the traveller hauled taut. All this being done, get way on the vessel again.

If the sea is heavy, look out and luff the vessel fairly into each comb of the waves, if they seem likely to strike her; if she enters them fairly, stem on, no harm will be done, and very little water break aboard; but be careful to ease her away again as the comber goes aft, and let her fall gently into the hollow. Should she ask for more reefs, get two down promptly, and close reef the foresail, and then get the storm trysail on deck and bend it to the gaff. Also get the storm-jib handy.

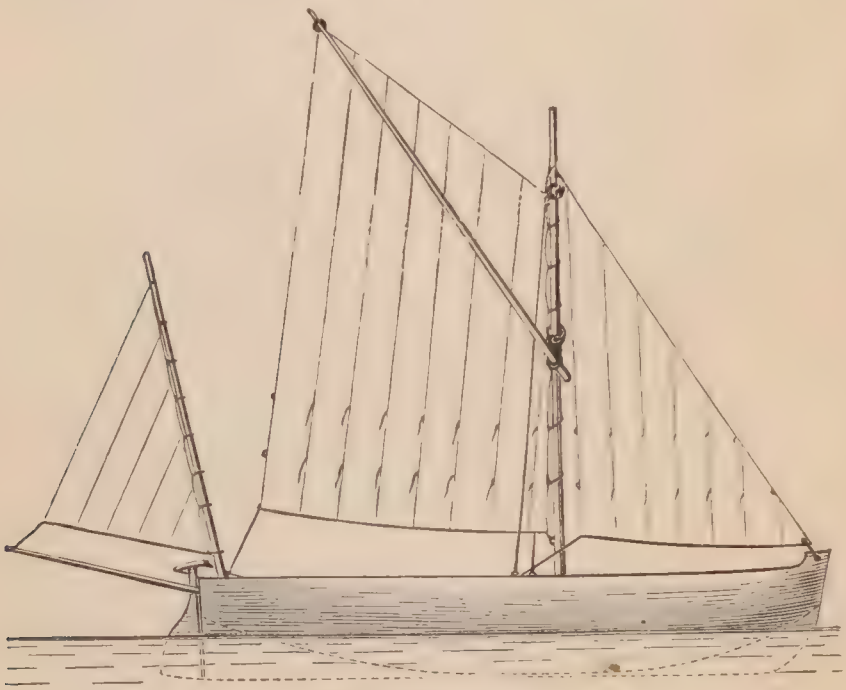
Should the gale increase, and it is found difficult to sail the vessel, and you do not wish, or if it does not look safe, to bear away and run for it, get ready to lie-to under storm-jib and trysail. The trysail is already on deck and bent to the gaff, but see that everything is ready to hand when the mainsail is lowered. All being ready haul the jib and foresail clews amidships, or a trifle to windward; then lower away the mainsail and drop the boom in the crutch; stow the sail, and snugly stop it along with the gaskets; then secure it with the boom-lashing to the quarter.

Now hook on the throat halyards to the trysail, following with the peak, and hoist away—seeing that the parrel of the jaws has been secured, and that the toggles are passed through the eyes of the strops as the sail goes up; pass the sheets aft, and hook the lee one into the eyebolt on the counter, and haul flat. The sail being set, ease up the jib and foresheets again, trim the trysail sheet, put up the helm, and then keep her at it full and bye. If you still find you cannot sail the vessel, the only course now will be to heave the vessel to. Get the foresheet to windward, haul the weather jib-sheet hand taut, slacking up the lee one, and slacken the trysail sheet a trifle. She will now ride comfortably to the sea—making perhaps a couple of knots an hour—with the helm amidships, and a hand to watch it and ease her, if necessary, to a sea; but should the gale get worse, stow the foresail and get a reef down in the trysail; then wait for fine weather.

It is highly important that a square sail should always be on board, as it may be of first-rate importance in scudding before a gale, and will be often found of service in light winds.

Sect. 6.—Management of a Small Sailing Boat.

A great deal of amusement may be got out of sailing an ordinary waterman's skiff such as is represented in the accompanying sketch. Great care will be necessary with a beam wind,



SMALL SAILING BOAT.

and the mainsheet should never be belayed if the breeze be fresh or inclined to be squally. If the mainsheet is worked on a horse with a single block, make fast the fall of the sheet with a bight through a turn round one of its own parts; if the sheet shifts over by unhooking, make fast in a similar way; if there be belaying pins through the quarter seats, the fall of the sheet can be safely belayed to them by taking a single turn round the bottom part of the pin; then bring the end up, and pass it round the top part, drawing the end through the bight in a loop so that one pull will loosen the whole of the turns for a sudden run out if required. But if the weather be at all squally, the sheet should not be belayed at all; merely take one turn with it under a thole-pin, and keep the fall in the hand. A boat rigged in the manner depicted will beat to windward, and indeed with a weather tide under her lee she will do so admirably, but she must be watched very carefully and

be kept a good full; in tacking, an easy helm should bring her up in the wind; if brought up suddenly all standing she may miss stays, and that would be awkward and dangerous in a lumpy sea.

To GET UNDER WAY.—First get the boat over her anchor by hauling in the cable and putting a stopper on it to prevent it paying out again. Then step the mast and loosen the sails, which will be found lashed round the mast by the main-sheet and fore and main sail halyards. Then take the tack and reeve the lashing through and through the thimble and the hole in the stem head; then haul taut the foresail halyards and belay through a thole-hole on the port gunwale, just abaft the thwart to which the mast is clamped. Haul taut the main halyards, and belay in a similar manner on the starboard side; thus the fore and main halyards will serve as shrouds, and the rope in the luff of the foresail as a forestay. Next take the sprit and pass its head into the eye in the peak earing of the sail; then push the peak up by main force and slip the foot of the sprit into the eye of the shifting strop, called a snetter, that encircles the mast for the purpose. Sometimes an iron ring with an eye attached for the foot of the sprit is used; a purchase will then be required to hoist the sprit. A gun-tackle purchase is the best; the standing part of the purchase will be secured well up the mast and the lower block hooked to the ring for hoisting; such a contrivance is only necessary in large sprit-sail boats. The mizen is used to keep the boat's head more to the wind, and is laced to the mast; the sheet passes through the end of the boom, and leads in-board; the whole of the mizen gear when unshipped is rolled up together.

SECT. 7.—REGATTAS.

It is the custom now at most seaside resorts to hold an annual regatta, and the programme usually contains a match for yachts, a valuable prize being offered as an inducement to owners to send their vessels to compete. Many places offer special advantages for such matches; but a yacht match was not always secured, generally owing to the uncertainty that prevailed as to the manner in which the regatta would be conducted. If there be no yacht club, what is termed a Sailing Committee, composed of townspeople, is appointed, and these go to work with the very best of intentions and wills; but, unfortunately, they often knew little or nothing of yachting, and still less of match sailing or yacht handling. The result was that if any difficulty arose owing to defective arrangements of the sailing regulations, or the hundred-and-one squabbles that may occur during the progress of a match, "the Sailing Committee" were completely puzzled, and very likely erred in their decisions. However, during the last three years the Yacht Racing Association has been formed, constituted similarly to the Jockey Club, and with similar functions. They have drawn up a code of rules for the management of yacht matches, which are clear and comprehensive; and should any dispute arise which a local committee cannot deal with, the matter can be referred to the Council of the Association for settlement. The Y. R. A. Sailing Rules are as follows:—

1. *Management of Races.*—All Races, and all Yachts sailing therein, shall be under the direction of the Flag Officers or Sailing Committee of the Club under whose auspices the Races are being sailed. All matters shall be subject to their approval and control; and all doubts, questions, and disputes, which may arise shall be subject to their decision. Their decisions shall be based upon these rules so far as they will apply, but as no rules can be devised capable of meeting every incident and accident of sailing, the Sailing Committee should keep in view the ordinary customs of the sea, and discourage all attempts to win a Race by other means than fair sailing and superior speed and skill. The decisions of the Sailing Committee shall be final, unless they think fit, on the application of the parties interested, or otherwise, to refer the questions at issue for the decision of the Council of the Yacht Racing Association. No member of the Sailing Committee or Council shall take part in the decision upon any disputed question in which he is directly interested. The Sailing Committee, or any Officer appointed to take charge for the day, shall award the prizes, subject to Rule 30. If any Yacht be disqualified, the next in order shall be awarded the prize.

2. *Postponement of Races.* — The Sailing Committee, or Officer in charge for the day, shall have power to postpone any Race, should unfavourable weather render such a course desirable.

3. *Measurement for Tonnage.*—The tonnage of every Yacht entered to sail in a Race shall be ascertained in the manner following: the length shall be taken in a straight line at the deck, from the fore-part of the stem to the after-part of the stern-post; from which deducting the breadth, the remainder shall be esteemed the length to find the tonnage; the breadth shall be taken from outside to outside of the planking, in the broadest part of the Yacht, and no allowance shall be made for wales, doubling planks, or mouldings of any kind; then multiplying the length by the breadth, and the product by half the breadth, and dividing the result by 94, the quotient shall be deemed the true tonnage; provided always that if any part of the stem or stern-post, or other part of the vessel at or below the load water-line project beyond the length taken as abovementioned, such projection or projections shall, for the purposes of finding the tonnage, be added to the length taken as stated. In the case of a Yacht whose stern-post has an elbow, the length shall be taken to a point where the stern-post, if its rake were continued, would cut the deck-line; and in measuring Schooners or other Yachts with overhanging stems, the length shall be taken to a point half the distance between the fore part of the stem at the deck line and a perpendicular to the true load water-line at its fore end. Any fraction of a ton shall count as a ton. [In the classes of 40 tons and under, a yacht built prior to 1877, shall be allowed to compete in the class for which she was designed, and without allowing time for any fraction of a ton in excess of such class, provided such fraction does not exceed $\frac{47}{94}$]. If, from any peculiarity in the construction of a Yacht, or other cause, the measurer shall be of opinion that this rule will not measure the Yacht fairly, he shall report the circumstances to the Council or Sailing Committee, who, after making such inquiries as they consider necessary, shall award a certificate of tonnage accordingly. The certificate of tonnage of the Yacht Racing Association shall be deemed a Yacht's true racing tonnage, so long as she remains unaltered.

4. *Time Allowance.*—Time shall be allowed on arrival for difference in tonnage, according to the annexed scale, increased or decreased in proportion to the length of different courses. If it is necessary during a Race to shorten the course, the signal flag denoting the race hoisted under the White Peter, or in case of fog or darkness two guns fired shall show that the race is to finish with the round about to be completed, and the time allowance shall be reduced in proportion.

5. *Entries.*—Entries shall be made with the Secretary at least forty-eight hours previous to noon of the day appointed for starting each Race. In case of a Sunday intervening, twenty-four hours shall be added. Entries may be made by telegram, and it shall be deemed sufficient that the same shall have been despatched before noon of the day on which the entries close, subject to the provision as to Sundays.

Form of Entry.—Form of Entry to be signed by the owner, or his representative, previous to the Race:—

"Please to enter the —— Yacht for the —— Race at ——, on the ——. Her distinguishing flag is ——, her rig is ——; and her tonnage, in accordance with Rule 3, is —— tons. I undertake that while sailing under this entry she shall not have on board *any bags of shot;* that all her ballast shall be properly stowed under the platform or in lockers, and shall not be *shifted or trimmed in any way whatever;* and that I will obey and be bound by the Sailing Rules of the Yacht Racing Association.

"Signed this —— day of ——."

Should any Yacht duly entered for a Race not start, or having started should she give up, or be disabled during the Race, such Yacht shall, in the event of the Race being re-sailed, be entitled to start; but no new entries shall be received under any circumstances whatever for a postponed Race.

6. *Ownership.*—Each Yacht entered for a Race must be the *bonâ fide* property of the person or persons in whose name or names she is entered, who must be a member or members of a recognised Yacht Club.

7. *Only one Yacht of same Owner.*—No owner shall be allowed to enter more than one Yacht in a Race, except in cases in which a Prize is given for each rig, when one Yacht of each rig may be entered, nor shall he be entitled to enter the same Yacht under different rigs for any race.

8. *One Yacht entitled to Sail Over.*—When a Prize has been offered for competition, any Yacht, duly entered, may claim to sail over the course and shall be entitled to the prize; subject, however, to Rule 2.

9. *Sliding Keels.*—No Yachts which are fitted to shift keels, or to otherwise alter their form, shall be permitted to enter.

10. *Member on Board.*—Every Yacht sailing in a Race shall have on board a Member of a recognised Yacht Club, who, before the Prize is awarded, shall sign a declaration, that the Yacht under his charge has strictly conformed to all the sailing regulations, as follows:—

Declaration that Rules have been observed.—"I hereby declare that the —— Yacht whilst sailing in the —— Race this day, has strictly observed the sailing rules and regulations.

(Signed) _____

Date _____ "

11. *Distinguishing Flags.*—Each Yacht must carry, at her main topmast head, a rectangular distinguishing Flag, of a suitable size, which must not be hauled down unless she gives up the Race. If the topmast be lowered on deck or carried away, the Flag must be re-hoisted in a conspicuous place, as soon as possible.

12. *Instructions.*—Every Yacht entered for a Race, shall, at the time of entry, or as soon after as possible, be supplied with written or printed instructions as to the conditions of the Race, the course to be sailed, marks, &c. Nothing shall be considered as a mark in the course unless specially named as such in these instructions.

13. *Sails.*—There shall be no restrictions as to sails, or the manner of setting and working them; but steam power must not be used for hoisting sails.

14. *Crew and friends.*—There shall be no limit as to the number of paid hands, and no restrictions as to the number of friends, or to their working. No paid hand shall join or leave a Yacht after the signal to start. [This rule is not intended to apply to Corinthian matches.]

15. *Fittings and Ballast.*—All Yachts exceeding five tons shall be fitted below deck with the ordinary fittings of a Yacht, including two transverse bulkheads of wood, and their platforms shall be kept down, and bulkheads standing. No water shall be started from or taken into the tanks after the signal to start has been made. No more than the usual anchors and chains shall be carried during a Race, which must not be used as shifting ballast, or for altering the trim of the Yacht. No bags of shot shall be on board, and all ballast shall be properly stowed under the platform or in lockers, and shall not be shifted or trimmed in any way whatever during a Race. No ballast shall be shipped or unshipped after 9 p.m. of the day previous to the Race. A Race re-sailed shall, so far as regards this rule, be considered a new Race.

16. *Boats and Life Buoys.*—Every Yacht exceeding thirty and under seventy tons, shall carry a boat on deck not less than ten feet in length and three feet six inches beam, and every Yacht of seventy tons and over, one of not less than twelve feet in length, and three feet six inches beam, with oars lashed in them, ready for immediate use. Each Yacht shall carry at least one life buoy on deck ready for use.

17. *Starting.*—The Yachts shall start from moorings, anchors, or under way, as directed by the Sailing Committee. Half-an hour before the time of starting one of the following Flags of the Commercial Code shall be hoisted as a preparative Flag for the Yachts of each successive Race; in case of a start from anchors or moorings to take up their stations for the start with headsails down, or all sails down, as the Sailing Committee may direct; or in case the start be a flying one, to approach the starting line, viz:—

B of Commercial Code for the Yachts of the 1st Race
C _____ 2nd ,,
D _____ 3rd ,,
F _____ 4th ,,

and so on.

Five minutes before the start the preparative Flag shall be lowered and a Blue Peter hoisted, and a gun fired;

after which, the Yachts in the race shall be amenable to the rules. At the expiration of five minutes *exactly* the Blue Peter shall be hauled down and a second gun fired as a signal to start. If the start is to be made from anchors or moorings, lots shall be drawn for stations, and springs shall be allowed on the same bridle or anchor chain or warp as the bowfasts, but are not to be carried to a buoy, pier, other vessel, or fixed object. If any Yacht lets go or parts her bridle before the signal to start, or if she drags any moorings or anchor to which she is made fast for the purpose of starting, she shall be liable to be disqualified, unless such parting or dragging be explained to the satisfaction of the Committee, or unless she has returned, after the signal to start, within the line of starting buoys, so as not to obtain any advantage by the accident. In a flying start if any Yacht, or any part of her hull or spars be on, or across the line before the signal to start is made, she must return and recross the line; a Yacht so returning, or one working into position from the wrong side of the line after the signal to start has been made, must keep clear of all competing Yachts. Should the gun miss fire, the lowering of the Blue Peter to be the signal to start.

18. *Meeting end on.*—If two Yachts are meeting end on, or nearly end on, so as to involve risk of collision, the helms of both shall be put to port, so that each may pass on the port side of the other.

19. *Two Yachts crossing.*—When two Yachts are crossing so as to involve risk of collision, then if they have the wind on different sides, the Yacht with the wind on the port side shall keep out of the way of the Yacht with the wind on the starboard side, except in the case in which the Yacht with the wind on the port side is close hauled and the other Yacht free, in which case the latter Yacht shall keep out of the way; but if they have the wind on the same side, or if one of them has the wind aft, then the Yacht which is to windward shall keep out of the way of the Yacht which is to leeward.

20. *Overtaking, Rounding Marks, &c.*—A Yacht overtaking another Yacht shall keep out of the way of the last-mentioned Yacht, but when rounding any buoy or vessel used to mark out the course, if two Yacnts are not clear of each other at the time the leading Yacht is close to, and actually rounding the mark, the outside Yacht must give the other room to pass clear of it, whether it be the lee or weather Yacht which is in danger of fouling the mark. No Yacht shall be considered clear of another Yacht, unless so much a-head as to give a free choice to the other on which side she will pass. An overtaking Yacht shall not, however, be justified in attempting to establish an overlap, and thus force a passage between the leading Yacht and the mark after the latter Yacht has altered her helm for the purpose of rounding.

21.—*Obstructions to Sea-room.*—When passing a pier, shoal, rock, vessel, or other obstruction to sea-room, should Yachts not be clear of each other, the outside Yacht or Yachts must give room to the Yacht in danger of fouling such obstruction, whether she be the weather or the leeward Yacht; provided always that an overlap has been established before an obstruction is actually reached.

22. *Luffing and bearing away.*—A Yacht may luff as she pleases to prevent another Yacht passing to windward, but must never bear away out of her course to hinder the other passing to leeward—the lee side to be considered that on which the leading Yacht of the two carries her main boom. The overtaking vessel, if to leeward, must not luff until she has drawn clear ahead of the Yacht she has overtaken.

23. *Close hauled approaching Shore*—If two Yachts are standing towards a shore or shoal, or towards any buoy, boat, or vessel, and the Yacht to leeward is likely to run aground, or foul of such buoy, boat, or vessel (a mark vessel excepted), and is not able to tack without coming into collision with the Yacht to windward, the latter shall at once tack, on being hailed to do so by the owner of the leeward Yacht, or the person acting as his representative, who shall be bound to see that his own vessel tacks at the same time.

24. *Running aground, &c.*—An Yacht running on shore, or foul of buoy, vessel, or other obstruction, may use her own anchors, boats, warps, &c to get off, but may not receive any assistance except from the crew of the vessel fouled. Any anchor, boat,

warp used must be taken on board again before she continues the Race.

25. *Fouling Yachts, Marks, &c.*—Each Yacht must go fairly round the course; and must not touch any buoy, boat, or vessel used to mark it out, but shall not be disqualified if wrongfully compelled to do so by another Yacht. Any Yacht causing a mark vessel to in any way shift her position to avoid being fouled by such Yacht, shall be disqualified. If a Yacht, in consequence of her neglect of any of these Rules shall foul another Yacht, or compel other Yachts to foul, she shall forfeit all claim to the Prize, and shall pay all damages.

26. *Means of Propulsion.*—No towing, sweeping, poling, or pushing, or any mode of propulsion except sails, shall be allowed.

27. *Anchoring.*—A Yacht may anchor during a Race, but must weigh her anchor again, and not slip. No Yacht shall during a Race make fast to any buoy, stage, or pier, or send an anchor out in a boat, except for the purpose of Rule 24.

28. *Sounding.*—No other means of sounding than the lead and line allowed.

29. *Side Lights.*—All Yachts sailing in a Race at night shall observe the Board of Trade rule as to the carrying of side lights.

30. *Man Overboard.*—In case of a man falling overboard from a competing Yacht, all other Yachts in a position to do so shall use their utmost endeavours to render assistance; and if it should appear that any Yacht was thereby prevented winning the Race, the Committee shall have power to order it to be re-sailed between any Yacht or Yachts so prevented and the actual winner.

31. *Protests.*—Should the owner of any Yacht, or the person acting as his representative, consider that he has a fair ground of complaint against another for foul sailing, or any violation of these Rules, he must, if it arise during the Race, signify the same on first passing the Committee vessel, by showing an Ensign conspicuously in the main rigging. The protest shall be made in writing, and under such regulations (if any) as the Sailing Committee may have determined, within twelve hours of the arrival of the protesting Yacht, and shall be heard by the Sailing Committee and decided, after such inquiries as they may consider necessary. They shall also, without a protest, disqualify any Yacht, should it come to their knowledge that she has committed a breach of the Rules.

32. *Removal of Flag Boat.*—Should any Flag Vessel or Boat be removed from its proper position, either by accident or design, the Race shall be sailed over again, or not, at the option of the Sailing Committee.

33. *Penalty for disobeying Rules.*—Any Yacht disobeying or infringing any of these Rules, which shall apply to all Yachts whether sailing in the same or different Races, shall be disqualified from receiving any Prize she would otherwise have won, and her owner shall be liable for all damages arising therefrom.

Should a flagrant breach of these Rules be proved against any Yacht, her Sailing Master may be disqualified by the Council for one season from sailing in any Race held under the Rules of the Yacht Racing Association.

34. *Cruising trim.*—When Yachts are ordered to sail in cruising trim, the following Rules are to be strictly observed:—

1. No doors, tables, cabin skylights, or other cabin or deck fittings (davits excepted), shall be removed from their places before or during the Race.

2. No sails or other gear shall be put into the main cabin in Yachts exceeding forty tons.

3. Anchors and chains suitable to the size of the Yacht shall be carried, one at the cathead (or in Yachts of forty tons and under, at the usual place on the bow), which anchor shall not be unshackled from the chain before or during the Race.

4. Every Yacht exceeding thirty and under seventy tons, shall carry a boat on deck not less than ten feet in length and three feet six inches beam—a Yacht of seventy tons and over, her usual cutter and dinghey.

5. No extra hands, except a pilot, beyond the regular crew of the Yacht are to be allowed.

Appendix.

The Yacht Racing Association further recommend for the consideration of Sailing Committees :—

1st. *Allowance to Schooners and Yawls.*—That as mixed Races are no satisfactory test of the relative speed of Yachts, the different rigs should, whenever practicable, be kept separate ; but when mixed Races are unavoidable, the following Rule shall be observed :—

The tonnage of Schooners and Yawls to be reckoned for time allowance as follows, viz., Schooners at three-fifths, and Yawls at four-fifths of their actual tonnage ; provided that in case of a Yawl, her main boom, when in its place and parallel to the deck, does not extend more than one-fifth her extreme beam abaft the aft side of her sternpost on deck. In calculating the deduction for difference of rig, the tonnage by certificate to the exact fraction to be used. The time allowances to be calculated from each vessel's reduced tonnage. Schooners and Yawls shall not be allowed to enter in classes of forty tons and under at the reduced tonnage.

2nd. *Flying Starts.*—That Flying Starts should be adopted when practicable, but no time should be allowed for delay in starting.

3rd. *No Limit to Race.*—That any limit to the time for concluding a Race should be avoided as far as possible.

4th. *Classification.*—That the classification of Yachts should, when practicable, be as follows :—

Not exceeding					5	tons
Above 5 tons and not exceeding					10	,,
,,	10	,,	,,	,,	15	,,
,,	15	,,	,,	,,	20	,,
,,	20	,,	,,	,,	40	,,
,,	40	,,	,,	,,	80	,,
,,	80					

5th. *Courses.*—That as distance is an important element in the calculation of time allowance, the marks and flag-boats should be placed so as to mark as accurately as possible the length of the course, for which time is allowed.

6th. *Rounding Marks.*—That in heavy weather it should be arranged, if practicable, for Yachts to stay instead of gybe round marks.

7th. *Room at Starting.*—Sailing Committees should be particularly careful to provide ample room between the points marking the starting line.

Sect. 8.—Nomenclature of the Parts of a Vessel.

Hull.

1. The hull.
2. Bulwarks
3. Stern, counter overhang, tuck
4. Rudder.
5. Cutwater, stem.
6. Hawse-pipe for cable.
7. Toprail.
8. Catheads.
9. Knight heads (*not shown*).
10. Channels and chain plates.
11. Load water line—line of flotation. The greatest space between that and bottom of keel is called "draught."
12. Covering board—plank sheer. The space between this line and the water-line is usually called the free board.
13. Taffrail.
14. Stern-post.
15. Keel.
16. Forefoot.
17. Heel.
18. Bilge and buttock line.
19. Dead wood.

Spars.

20. Mainmast.
21. Main topmast.
22. Mainmast head cap.
23. Main crosstrees, for spreading topmast shrouds.
24. Main topmast truck ; and below it to the rigging, the pole.
25. Main boom.
26. Main gaff.
27. Main topsail yard.
28. Main topsail jack yard.
29. Foremast.
30. Fore topmast
31. Foremast head cap.
32. Fore crosstrees.
33. Fore topmast truck.
34. Fore gaff.
35. Fore topsail jack yard.
36. Fore topsail yard.
37. Bowsprit.

Standing Rigging.

38. Main shrouds, the eyes of which are passed over the masthead and rest on the hounds.
39. Main topmast shrouds.
40. Dead-eye blocks and lanyards of shrouds.
41. Main shroud spread-pole.
42. Fore shrouds.
43. Fore topmast shrouds.
44. Dead-eye blocks and lanyards of fore shrouds.
45. Fore shroud spread pole.
46. Fore stay.
47. Fore topmast stay.
48. Main topmast stay.
49. Triatic stay.

Running Rigging.

50. Main runner pennant.
51. Main runner.
52. Main runner tackle and fall.
53. Main topmast preventer back stay.
54. Main topmast back stay tackle.
55. Topping lifts.
56. Main sheet and block.
57. Main throat halyards.
58. Main peak halyards.
59. Main peak downhaul.
60. Main topsail halyards, rove through a sheave in the topmast.
61. Main topsail upper halyards.
62. Main topsail sheet
63. Main topsail clew-line.
64. Main topsail tack tackle.
65. Mainsail clew-traveller and outhaul.
66. Reef pennants rove.
67. Fore runner pennant.
68. Fore runner.
69. Fore runner tackle and fall.
70. Main topsail preventer back stay and tackle below.
71. Fore sheet and block.
72. Fore throat halyards.
73. Fore peak halyards.
74. Fore topsail halyards
75. Fore topsail upper halyards.
76. Fore topsail sheet.
77. Fore topsail clew-line.
78. Fore topsail tack and tackle.
79. Jib-halyards.
80. Jib downhaul.

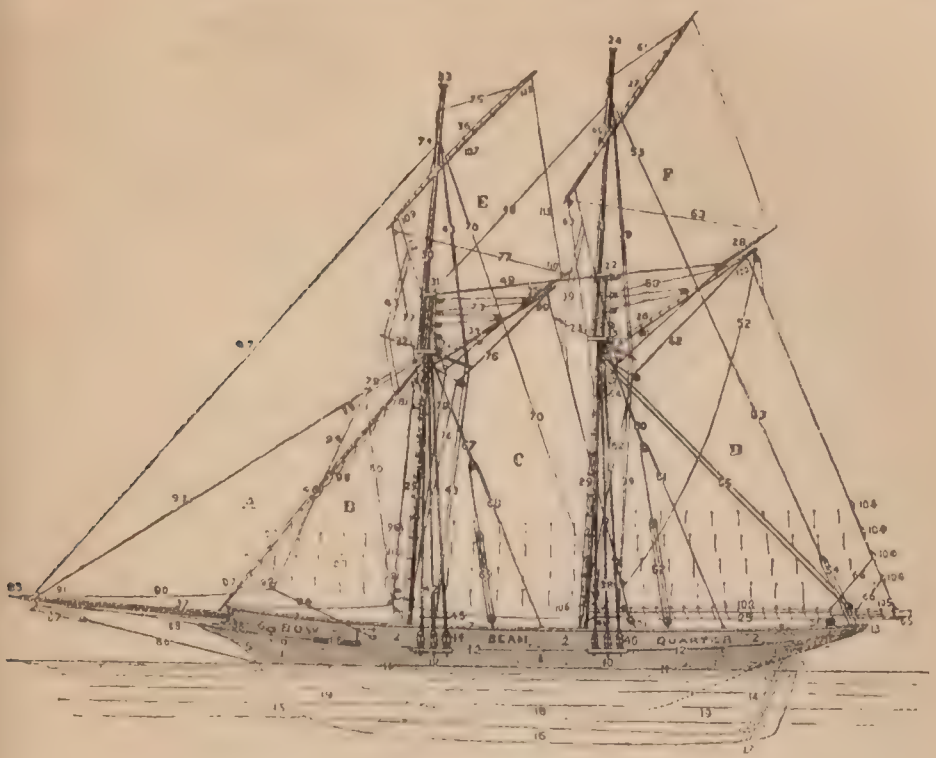


DIAGRAM OF RIGGING.

81. Head of fore staysail, block and halyards
82. Fore staysail downhaul.
83. Fore staysail sheets.
84. Jib-sheet.
85. Jib-traveller, outhaul and inhaul.
86. Bobstay.
87. Running tack'e of bobstay.
88. Bowsprit shrouds and tackle.

SAILS.

A. JIB.

89. Head of jib.
90. Foot of jib.
91. Tack hooked to traveller.
92. Clew.
93. Luff.
94. Leech.

B. FORE STAYSAIL.

95. Hank or toggles round forestay.
96. Reef cringles for sheet.
97. Reef cringles for tack.
98. Reef points. The corners of the sail are the same as those of the jib.

C. FORESAIL.

Luff of sail, hoops encircling the mast and seized to sail; luff cringles and reef cringles, the same as fore staysail.

99. Fore peak earing.

D. MAINSAIL.

100. Main peak earing.
101. Head of sail and gaff lacing.
102. Foot of sail and boom lacing.
103. Throat of sail.
104. 1st, 2nd, 3rd, and close reef cringles and corresponding outs in luff of sail and eyelet holes for laced reefing.
105. Clew of sail.
106. Main-tack and main-tack lashing or tackle.

E. FORE BALLOON GAFF TOPSAIL.

107. Head of sail and yard lacing.
108. Peak and peak earing.
109. Weather earing.
110. Clew and sheet.
111. Tack.
112. Luff.
113. Leech.

F. MAIN BALLOON GAFF TOPSAIL.

All the parts of this sail correspond with those of the fore gaff topsail.

SECT. 9.—A DICTIONARY OF NAUTICAL TERMS.

Aback—The condition of sails when the wind suddenly assails what had been their lee surfaces.

Abaft—A term used to denote a situation behind some object, or part of a vessel, commencing from the stem and ending at the stern.

Abeam—Said of an object that is in a line at right angles from the centre of a vessel's side.

Aboard—To be inside a ship, or on a ship. Used also in different ways, such as to "keep the land aboard," instead of "hugging the shore;" to get "soundings aboard," instead of "running ashore;" to "fall aboard each other," instead of "collision."

About—The act of a vessel going from one tack to the other, when working to windward. The crew is warned before this takes place by the words, "Ready about," and the response is, "All ready, sir," and then the master, or whoever is in charge of the deck, again warns the crew that "helm's

a-lee," to denote that the vessel is coming up in the wind.

Abreast—Beam and beam; abeam. Two ships are said to be abreast when alongside of each other.

A-cock a-bill—Said of an anchor when it hangs by its ring from the cat-head.

Across—Athwart. Said of a yard when squared horizontally on a mast. Across the tide, is the situation of a vessel that has the tide on her side.

Adrift—Broke from moorings, and floating about without control. Cast loose. Torn away.

Afloat—Supported on the surface of the sea. Being on shipboard.

Afore—As opposed to "abaft," and means forward; used in a variety of ways in contradistinction to abaft, as "afore the beam," "afore the main rigging," &c.

Aft—Towards the stern.

After—The situation of anything not included in the foreward part of a ship.

After-end—Said of that part of a ship abaft the midship section. It also applies to any spar or part of a ship which has an end pointing towards the stern.

After-guard—The men whose duty it is to work the sails set aft.

Aftermost—Farthest away from a point forwards.

After-sails—Opposed to head-sails, and set abaft the mast. In a cutter, the after-sail is a main-sail. In a schooner, main and fore-sail; and in a ship, all sails set on and between the main and mizen masts.

Aground—The position of a vessel when on the ground and not floating.

Ahead—Directly in front of a vessel's bow. The wind is said to be "dead ahead" when it blows from the point the vessel wishes to reach, to the present position of the vessel. "Going ahead," synonymous with making progress.

Ahoy!—An expression used to attract the attention of some one on board a vessel, as "Miranda, ahoy!"

A-hull—Lying-to under bare poles. An abandoned ship.

A-lee—The situation of the tiller or helm when it is put down or to leeward, when going about, or in luffing.

All-a-taunto—Fully rigged.

All hands—The whole of a crew.

All standing—Fully equipped. Without warning.

All in the wind—When a vessel's sails are shaking from sailing too near the wind.

All ready—A response from one of the crew to denote that they are ready to carry out an order.

Aloft—Above deck.

Amain—To let all go at once. Suddenly.

Amidships—The centre of a vessel, spar, &c.

Anchorage—A spot suitable for vessels to anchor upon.

Anchor watch—The men kept on deck during the time a vessel is at anchor.

An-end—See "On end."

Angulated jib—A jib in which the cloths meet in the centre and converge thereto from the head and foot. Invented by Matthew Orr and Robert Kipping.

A-peek—The cable hove short, so that the vessel is over the anchor.

Arm—The end of a yard.

Articles—The rules which seamen sign when they join a ship.

Ashore—Aground. Opposed to aboard.

Astern—Contrary to "ahead."

Athwart—Across a vessel.

Athwart hawse—Directly across a vessel's cable.

A-trip—Said of an anchor when it comes off the ground.

Avast!—Stop. As avast heaving, avast hauling, &c.

A-wash—Level with the surface of the water.

Away—Set about doing an order.

A-weigh—When an anchor leaves the ground.

A-weather—The opposite of a-lee. The helm is a-weather when "put up" in the direction of the wind to bear away for "gybing," "wearing," or merely to alter course and keep a point or so more off the wind.

To Back—With oars.

Back an anchor—To carry a small anchor beyond the other, to relieve the strain.

To Back a sail—To bring the sail round so that the wind comes on its other side.

To Back and fill—To get to windward by backing some of the sails, and filling off again, in narrow channels. In a fore-and-aft rigged vessel a similar effect is accomplished by

shooting up in the wind and filling off again.

Backstays—Large ropes used to support the masts. They come aft either side of the ship from the masthead.

Balance reef—A reef that crosses from the outer head earing to the tack of a fore-and-aft mainsail. Another way is for the reef band to run from the throat to the clew or from the throat to the upper-reef cringle. Either is an excellent method of making a snug sail in heavy weather, but seldom seen in yachts.

Bale—To empty a boat of water.

Ballast—Iron, lead, stone, or other heavy material, placed in a ship's bottom to prevent the pressure of wind on the sails turning her over. Without ballast, the centre of gravity of a vessel would be exceedingly high, and she would be what is called "a crank" or unstable ship. The measure of a vessel's stability by ballast is in proportion to the depth that the ballast is situated; but if it is too low, the vessel is apt to roll uncomfortably and be without "life" in light weather. The vessel whose centre of gravity is near the water-line makes the best and most comfortable sea boat, and is also likely to be fast.

Ballast, to freshen—To shift ballast.

Balloon foresail or *fore staysail*—An enormous sail set on the forestay of cutters and schooners, and used for close-hauled sailing in light weather.

Balloon-jib—An enormous jib made of light canvas carried by fore-and-aft rigged craft; the foot extends from the bowsprit end to the fore-rigging. It is used when sailing from one to eight or nine points free.

Balloon topsail—A square-headed gaff topsail of very large proportions, set with a yard and a jack-yard at clew; to the latter the sheet is bent.

Bank of oars—The thwarts or seats upon which rowers sit side by side. In old "galleys" there were four men to each oar, and twenty-five oars on each side, but now we never see more that two. Double banked is when two men sit on the same seat and have separate oars. The "bank" is the side of the seat allotted to the men for each oar.

Banyan day—A day in which no meat is served out to the men. Of no meaning now as applied to a ship's regulations.

Bare poles—With no sails set. Scudding under bare poles is running before the wind with no canvas set.

Battens—Strips of wood let into the mast to prevent its wearing. Strips of wood put round hatches over tarpaulins to keep the latter down. A batten of wood is also used for several purposes on a vessel's rigging. A thin splint of wood used by naval architects for making curved lines.

Beach—A shore. To beach a vessel is to lay her on shore by accident; or by design, in order to clean her bottom, unload, take in ballast, &c.

Beam—The breadth of a ship. The midship side of a ship. Abaft the beam is behind the centre of the ship's side, and forward of the beam is in front of that centre. See also "Abeam."

Beam ends—Said of a vessel when she heels over so as to rest completely on her side, or present the ends of her beams to the water.

Beams—Timbers of great strength, on which a vessel's decks rest.

Bear a hand—To be active, to assist.

Bear away—To put the helm up and cause the vessel's head to go off the wind.

Bearing—The direction of an object from a ship according to compass.

Bearings—That part of a vessel about the water-line which forms the area of flotation.

Bear up—The same as bear away.

Beating to windward—Making for a point to windward by short tacks.

Becalm—To prevent the wind filling a vessel's sails.

Becket—A rope used to confine spars.

Beef—A term used to denote strength.

Belay—To make a rope fast to a pin or cavel, without hitching or seizing. "Belay there!" Stop hauling, and make fast.

Bend—To attach a sail to a yard. To bend a cable is to attach it to an anchor. A knot by which two ropes are fastened together.

Berth—A place to sleep in. A place where a vessel is lying.

Between decks—The space between the cabin floor and deck of yachts. The space between any two decks of ships.

Bight — The loop of a rope when doubled.

Bilge—That part of the hull that rests on the ground when not floating.

Bilge-pieces—Kind of keels placed on a vessel's side to support her when grounding; also to make a flat-bottomed vessel hold a better wind.

Bilge-water—Water that settles in the bilge of a very flat-bottomed ship.

Bill of sale—A document by which a vessel or shares thereof are transferred from one person to another.

Binnacle—The box which contains the compass.

Bitts—Two strong timbers rising from and secured by framework to the deck. To these the windlass for getting the anchor is attached, and the bowsprit passes between them.

Blanketing—A slang term, used when one vessel covers or becalms another with her sails.

Block—A casing of wood, containing a sheave, through which a rope is passed. A single block has one sheave; a double, two; treble, three; and fourfold, four.

Board—The distance a vessel traverses before tacking when working to windward. To make a "stern-board" is to make way by the stern, as a vessel will often do in a tideway or when in irons. To go "by the board" is said of a mast when it is carried away.

Bobstay—A rope or chain with tackle and double blocks attached to the bowsprit end and stem of a vessel, and used to keep the bowsprit down when the jib is set.

Bolt-rope—A rope sewn in the edge of sails to prevent them splitting.

Bolts—Various kinds of iron, copper, or brass bars used in ships, such as ring-bolts, eye-bolts, &c.

Bonnet—A piece of canvas laced to a sail, and generally equal to two reefs.

Boom—The spar that extends the foot of fore-and-aft sails.

Bowline—A rope used to stretch taut the after leech of a sail when on a wind. A vessel is said to be on a bowline when close hauled.

Bowsprit—A spar that extends from the bows of a vessel. A "running" bowsprit is such as a cutter has, and is horizontal, and can be reefed at pleasure.

Brace—A rope by which a yard is worked.

Brails—Ropes by which fore-and-aft sails are gathered up instead of stowed, and secured by gaskets.

Breaker—A cask for containing water.

Break off—A vessel when close-hauled is said to break off when the wind comes more ahead.

Bridle—Two or more ropes extending from the leech of a sail to which the bowline is attached.

Bring-to—To come up in the wind so that a vessel's way is almost stopped.

Bring-up—To come to anchor.

Broach-to—To fly up in the wind when going free, so as to bring the wind on the other side of the sails.

Bulkheads—The partitions in vessels which form the cabins, &c.

Burton—A particular kind of tackle used for supporting and lifting weights.

By the head—When a vessel is down by the head. See "Head."

By the lee—When a vessel in running brings the wind on the other quarter.

By the stern—When down by the stern.

By the wind—When sailing close-hauled.

Cable length—100 fathoms, or 200 yards. A cable length denoted on a chart is 607·5 feet.

Cap—A strong piece of wood used to secure a topmast to the masthead.

Capstan—A machine that revolves on a perpendicular axis; now much used by yachts instead of windlasses to get their anchors.

Carvel-built—When the planks of a vessel are flushed and caulked.

Cast—When head to wind, to fill off on either tack. It also relates to a passage by sea.

Cast off—To let go.

Cavel—Large timber cleats for belaying the mainsheets or maintacks of square-rigged ships to.

Card—The dial of the compass, whereon the points are marked, and underneath which is the magnetic needle.

Cathead—A strong timber on the bow of a vessel, level with the top-rail, by which the anchor is suspended by a tackle.

Chain pipe—An iron pipe in the deck through which the cable passes from below.

Chain plates– Pieces of iron to which

the dead eyes of the rigging are attached and spread by blocks of wood, called channels.

Chain shackle—The shackle that connects the parts of a cable, and fifteen fathoms apart.

To Check-sheets—To ease them off.

Cheerly—Willingly, heartily. A term of encouragement to men when engaged in heavy work.

Claw—To beat to windward off a lee-shore, or generally to beat to windward when such is difficult on account of heavy weather.

Cleat—A piece of wood used to belay ropes to.

Clew—The after lower corner of a fore-and-aft sail.

Clew-line—A line used to hoist up the lower corners of a sail.

Clincher-built—When the planks overlap each other.

Close-hauled—When a vessel's sheets are hauled so flat that she sails as near the wind as possible. A schooner yacht will sail 4½ points off the wind, and a cutter about 4¼.

Coamings—Pieces of timber forming a frame on the deck round a hatchway or skylight.

Coat—Painted canvas, used to cover a sail when stowed.

Come up—Said of a rope when it slacks.

Crank—Said of a vessel when she will not stand up well to her canvas. A narrow and deep vessel is sure to be "crank."

Crawze—An iron band with eyes to make gear fast to at the end of a bowsprit or other spar.

Cringle—A piece of rope surrounding a ring in the after leech of a sail, through which the reef-pennants are rove.

Cross sea—A sea or swell caused by a wind different from that blowing at the time the cross sea is running.

Cross-trees—Pieces of timber supported by the trestle-trees, used to spread the topmast rigging.

Crutch—Forked pieces of timber or iron fixed into a socket of the taffrail, and used to support the boom when the mainsail is stowed.

Cuddy—A cabin under the deck, put in the fore-part of small boats.

Davits—Iron stanchions or pieces of timber fixed on a vessel's side or stern, to carry boats, they being hoisted to the davits by tackles.

Dead eyes—Round blocks with three holes without sheaves attached to the chain plates; above these are corresponding ones attached to the shrouds, and through each are rove lanyards by which the shrouds are set up.

Dead lights—Pieces of wood that fit in the cabin windows in bad weather.

Dead on end—When the wind blows straight down the course a vessel has to make.

Dead water—The eddy water left under a vessel's stern when she is under way.

Deep-sea lead—A lead used for sounding in deep water.

Dinghey—A small boat carried by yachts. The name is derived from a small boat used by the Indians.

Doldrums—Said of a vessel when in a calm.

Downhaul—A rope affixed to the head of a sail, to haul it down easily.

Earings—Small ropes used to fasten the upper corners of sails to the yards.

Ease off, or *Ease away*—To slacken out the fall of a tackle, sheet, or any rope that is belayed.

Ease the helm—To put the helm down when close-hauled, so that a vessel's head may enter a sea fairly. Generally to put the helm more amidships when it has been put either to port or starboard.

End on—Said of a vessel approaching stem on an object.

Entrance—The fore-part of the bow of a vessel that is immersed.

Even keel—Said of a vessel when perfectly upright and floating evenly.

Eyebolt—A boat with an eye to it for hooking tackles to, &c.

Eyelet-hole—Holes in a sail through which a lacing is passed or reef nettles rove.

Eye of a strop—That part of a strop of a block formed into an eye by seizing.

Eyes of rigging—Eyes made in the shrouds or stays, which pass over the masthead and rest on the hounds.

Eyes of vessel—The fore-part of a vessel.

Eyesplice—A splice made by the end of a rope to form an eye.

Fair—Said of a wind which a vessel has when she can lay her course a point or any number of points free.

Falling home—Tumbling home—Said of the topsides of a vessel when they incline inboard.

Falling off—The act of a vessel going off her course when close-hauled, by the wind coming more ahead.

Fall of a rope—That end of a rope of a tackle on which the men pull.

False keel—Wood fixed by bolts or other means under the main keel to increase a vessel's lateral resistance. Sometimes it is heavily weighted to give additional stability or power to carry canvas.

Fathom—A length of six feet.

Feel the helm—Said when a vessel first gets steerage-way, and when on a wind she carries weather helm.

Fend—To ward off.

Fetch—To arrive at a point when sailing to windward by weathering it.

Fid—A bar of iron which passes through the topmast and rests on the yoke.

Filling—To fill a vessel's sails is the effect of getting her head off the wind after the sails have been shivering.

Fine breeze—When a vessel can carry all whole canvas but had better look out for sprung spars, &c.

Fish—A long piece of wood lashed round a spar to strengthen it.

Flare—Said of a vessel's sides, especially her forward bulwarks, when they incline outward from the perpendicular. Contrary to "falling home."

Flatten in—To haul in the sheets.

Fleeting—Separating two blocks of a tackle in order that a new pull or strain may be got on the part the tackle is applied to.

Floating anchor—A contrivance of various forms whereby a ship is brought up in deep water in bad weather. A simple plan is to stretch canvas over crossbars of irons attached at the centre. This keeps an upright position some distance below the surface of the water, and by its resistance will prevent a ship driving to leeward, and by it she may ride comfortably head to the sea.

Floor—That part of a vessel under water which extends from the keelson.

Flowing sheets—When the sheets are flared off, in opposition to close-hauled.

Fly up in the wind—Said of a vessel when she comes up suddenly head to wind, by reason of her griping or through the bad steering of the helmsman.

Foot—The lower part of a sail or mast.

Force of wind—The strength of wind that may be blowing. 0 being a calm and 12 the strongest gale.

Fore—The foreward part of a vessel or object, as opposed to after.

Fore-and-aft—From stem to stern.

Fore-and-aft sails—Sails that are set on gaffs and stays, and not on yards.

Forefoot—The foreward extremity of a vessel's keel and the lower part of her stem, usually composed of "dead wood."

Fore-reach—When close-hauled to sail ahead of another vessel. To fore-reach to windward is to sail ahead of a vessel and yet to windward of her at the same time.

Forge ahead—To shoot ahead.

Forward—The head or fore-part of ship.

Foul—Entangled. To foul a vessel's berth is for one ship to get her cable across one of another ship previously anchored. Foul hawse is when a vessel is moored by two anchors, and the cables, by the vessel swinging, get across each other or twisted.

Free-board—That part of a vessel's side between the water-line and deck above water.

Free-wind—When a vessel has the wind so as not to be close-hauled. When the wind comes abeam or on the quarter, a vessel is said to be going large. A fair wind may mean free, large, or any wind that blows between 12 points of the compass from the point on which the vessel would be close-hauled.

Fresh breeze—The strength of wind which would cause an ordinary vessel to reef if close-hauled. It is numbered 6 in the table of wind forces, 12 being the maximum.

Freshen—This term, as applied to ropes, means to alter the strain or bring the chafing on another part.

Fresh gale—A stronger wind than a fresh breeze.

Gaff—The spar used to extend the head of fore-and-aft sails.

Gaff topsail—A sail set over a gaff, and it may be either pointed at the head like a jib, or square and bent to a yard.

Gale—When the wind blows at a strength of 10. A fresh gale comes first, then a stiff gale, and hard gale or strong gale.

Gammoning—A lashing many times rove.

Gangway—The entrance of a ship through her bulwarks or sides. Also generally a passage or thoroughfare.

Gantline—Properly girtline. A rope rove through a single block at the mast-heads, to hoist rigging or men by.

Garboard strake—The plank next the keel, into which it is rabbeted.

Gaskets—Ropes used to secure sails to their yards or booms when furled or stowed.

Gather way—Said of a vessel when she first moves with the force of the wind.

Gimbals—The supports on which two axles revolve at right angles, as the compass in the binnacle.

Girtline—See Gantline.

Give her sheet—To ease off sheets.

Give way—An order to rowers to hang on their oars, or to pull with increased vigour.

Goose-winged—Said of a schooner whose mainsail and foresail are extended on opposite sides as she runs before the wind.

Green sea—An unbroken body of water that will sometimes fall aboard a vessel. Such a body will look green unless scattered into spray.

Gripe—The outside part of the forefoot of a vessel.

To Gripe—To have a tendency to come up in the wind by reason of having too much forefoot or gripe.

Grommet, or *Grummet*—A ring formed of a rope of three strands, all being unlayed, and then worked in again until each end is secured under a strand. A grommet is used to hoist sails by, and to put round yards to which sails are bent for hoisting—then called "slings."

Ground tackle—A general term applied to anchors, and all relating to them.

Gun-tackle purchase—A tackle composed of two double blocks and rope, the standing part of which is secured to one of the blocks. It multiplies power threefold.

Guy—A rope used to prevent a boom swinging aboard either fore or aft. In running before the wind a guy is often attached to the main boom of a schooner to prevent a sudden gybe.

Gybe—When running before the wind, to bring the wind on the other side by putting up the helm, and thereby cause the sails to fall over.

Halyards—The ropes used to hoist sails, yards, &c.

Hand—One of the crew. "Extra hand," a man employed on board a vessel for a particular occasion.

Hand a sail—To lower and stow or furl it.

Hand lead—A lead weighing about 14 lb., used for sounding in less than 20 fathoms.

Hand-over-hand—To haul on a rope by passing one hand rapidly over another. This is the smartest way of hauling, and the strain being equal and not intermittent, as with a "one, two, three, haul!" the vessel is not shaken. This is often a consideration in match sailing, especially when getting in the main-sheet.

Handsomely—With great care and caution. To slack up a purchase handsomely is to ease the fall so that there is no fear of its going up by the run. To lower away handsomely is to slack halyards so that the sail comes down leisurely, and not by the run.

Handy Billy—A watch tackle, kept on deck for immediate use.

Hang—On a rope for hauling. Hang to windward, as opposed to making lee way.

Hanks—Hoops or rings of iron, wood, or rope, used to secure a sail by the luff to a stay.

Hard a-lee—Synonymous with "hard down" as applied to the tiller, which brings the rudder a-weather, and causes a vessel to come up in the wind.

Hard a-weather—Synonymous with "hard up" as applied to the tiller, which brings the rudder a-lee, and causes the vessel to go off the wind, or bear up or bear away.

Hard a-port—The situation of the tiller placed to port to bring a vessel's head round to starboard.

Hard a-starboard—The opposite of hard a-port.

Hatches—Openings in the decks.

Haul—To put a strain on a rope.

Haul aft a sheet—To haul a sail flatter or at a less angle to the wind.

Haul her wind—Said of a vessel going free, when she comes up closer to the wind and flattens her sheets.

Haul in—To sail in towards an object, &c., close-hauled or by the wind.

Hawse—A term applied to a cable, and used in this respect in various senses.

Hawse pipes—Iron pipes on either side of a vessel's bows, through which the cable passes.

Hawser—A large rope used for working, towing, and sometimes anchoring.

Head—Applied to the top part of masts, as "mast-head," "topmast-head," &c. The fore end of a vessel. To be down by the head, is when a vessel is trimmed so as to be deeper by the head than her water-line pronounces she should be. Such a situation gives the vessel a tendency to gripe, carry weather helm, and pitch heavily.

Head-sails—The sails that are set forward of the foremast. If a vessel has only one mast, then the sails that are set forward in the same way.

Head sea—The waves that come ahead of a vessel's course.

Head-sheets—The sheets by which a vessel's head-sails are trimmed.

Head to wind—When a vessel's head points in the exact direction the wind is blowing from.

Headway—The progress a vessel makes forward.

Head wind—The wind that blows down a vessel's intended course, so as to be what is termed "dead on end."

Heave about—To tack.

Heave to—To lie to.

Heaving in—Shortening in the cable.

Heaving short—Getting in the cable until the vessel is over anchor, when the latter is ready to be "a-weigh."

Heel—The after end of a vessel's keel. It is also applied to the step of a mast or the bottom part of any mast. "To heel" is synonymous with "careering" or "listing."

Helm—Generally applied to the tiller, but properly it means the whole apparatus for steering.

Home—Said of an anchor when it leaves the ground.

Hoods—Painted canvas, used to cover sails when stowed.

Hounds—Projections on the mastheads to support the rigging.

Housed—The situation of a topmast that has been lowered.

In-board—Inside a vessel.

In irons—A vessel is said to be in irons when in going about she comes up head to wind, and will not fill off one way or the other.

Jack-stay—A stay along a mast or yard to which a sail is bent.

Jack-yard—A small yard used to extend the foot of a fore-and-aft balloon topsail that extends beyond the end of the gaff.

Jaws—The part of a gaff or boom which encircles the mast.

Jib—A triangular sail set on a stay in square-rigged ships, and then called a standing jib.

Jib-boom—A spar that extends beyond the bowsprit. A flying jib-boom is another spar that extends beyond the jib-boom.

Jib-foresail—The fore-staysail of fore-and-aft schooners.

Jib-purchase—A tackle used for setting up a jib.

Jib-topsail—A triangular sail set on the fore-topmast stay of fore-and-aft vessels.

Jib-traveller—The travelling ring that encircles the bowsprit to which the tack of a jib is secured and hauled out on the bowsprit or jib-boom, as the case may be.

Kedge—A small anchor.

Keel—The lowest fore-and-aft timber of a vessel.

Keelson—A timber inside a vessel over the angle of the floors and bolted through the keel, which serves to bind all the timbers together.

Knot—See "Nautical mile."

Knight-heads—Strong timbers, one on either side of the stem, used to support the bowsprit.

Lacing—The cord or rope used to lace a sail to a spar; or to lace a bonnet on a sail.

Lanyards—Ropes that pass through the dead eyes of rigging.

Larboard—Port. (Obsolete.)

Large—A vessel is said to be going large when she has the wind three or four points free.

Lay—A vessel is said to lay her course when, close-hauled, she will just point her head in the direction she wishes to go.

Lay-to—See "Lie-to."

Lead—An instrument with a line used for sounding. A hand lead weighs

from 7 lb. to 28 lb., and a deep-sea lead from 28 lb. to 56 lb.

Lee—The opposite side of a vessel to that on which the wind blows.

Leech—The outer edge of a sail.

Leeward—The opposite of windward.

Leeway—The way a vessel makes to leeward when sailing.

Lie-to—To trim the sails so that they keep full without giving way or motion to a vessel.

Load water-line—The draught of a vessel when properly ballasted or laden.

Log—The diary kept of a ship's sailing.

Log-line—A line used to tell the rate of a ship's sailing.

Lubber's point—The black vertical line inside the compass bowl by which the steersman tells the direction of the vessel's head.

Luff—To sail closer to the wind.

Lug-sail—A sail set on a yard, as generally used in small boats.

Main-boom—The spar that extends the foot of the mainsail of a fore-and-aft craft.

Main-keel—The keel proper of a vessel, and not the false keel.

Main-purchase—A two or three-fold block tackle, used for setting the mainsail after the throat halyards have been hauled hand taut. The peak-purchase is a similar tackle used for setting up the peak of a sail.

Mainsail outhaul—The tackle that stretches the mainsail of a fore-and-aft rigged craft along the boom.

Mainsheet—The sheet of a mainsail.

Martingale—A short spar under the bowsprit, used to give more spread to the stays that set the bowsprit or jib-boom down.

Mid—A contraction of middle.

Miss stays—In tacking, to fail in going about, and to be compelled to fill off on the same tack again.

Moored—Riding by two anchors.

Mousing—Yarn used to turn round the mouth of a hook, to prevent its unhooking.

Mudian—A contraction of Bermudian. A kind of lateen-rigged boat peculiar to Bermuda.

Nautical mile—2025·2 yards: thus 13 knots or nautical miles are nearly equal to 15 statute miles.

Nautical day—From noon till noon, 24 hours.

Near—Said when a vessel is sailed too close to the wind. As "All near forward there!"

Nettles—Reef points, also hammock clews.

Nip—A sharp turn in a rope round a pin or spar, &c.

Nothing off—Said to a helmsman when he has to keep a vessel as close to wind as practicable.

Off-and-on—Working along a shore by standing off, and then on, by short boards.

Offing—Seaward beyond an anchorage.

Off the wind—Sailing free, not close-hauled.

On a bowline—A term used in a square-rigged ship when she is sailed so close that her sails will not stand unless the bowlines are hauled taut.

On a wind—A vessel is said to be on a wind when she is close-hauled.

On end—Perpendicular with the deck. Said of masts and topmasts when they are in their places.

Opposite tacks—Two vessels are said to be on opposite tacks when one is on the port tack, and one on the starboard tack.

Outboard—Outside of a ship.

Outrigger—A boom or rod of wood or iron used to extend guys outside ships, &c.

Overhaul—To run the parts of a rope through the blocks ready for a new pull. To come up with another vessel.

Painter—A rope attached to the bows of a boat, used to make her fast to a landing-place, &c.

Pay off—When a vessel's headsails fill, and her bow goes off to leeward.

Pay out—To slack out a cable or rope.

Peak—The upper outer corner of the gaff-sails.

Pendant—A stout rope with a block at the end, extending from the mast-head half way down the mast. At the end of the rope is a single block, through which another rope or runner is passed; at one end of this runner is a hook which is attached to the vessel's side; at the other end of the runner is a tackle by which the whole is set up to keep the masts from going forward. (Pronounced "pennant" and generally so written.)

Pennant—A long, narrow flag.

Plank sheer—Planks that cover the timber heads level with the deck. The space between the plank sheer and the water-line is called the "free board."

Poop—The highest part of the stern.

Pooping—The act of a sea breaking over a vessel's stern.

Port—A harbour, place of refuge, &c. A hole in a vessel's side. The left-hand side of a ship when standing on her deck and looking towards her bow. To port a vessel's helm is to place the tiller on the port side, so as to bring her head round to starboard.

Preventer stays.—Additional ropes set up taut to prevent spars carrying away when a vessel is under a press of canvas.

Purchase—A tackle of various denominations.

Quarter—That part of a vessel extending from the stern towards the beam.

Quarter wind—The wind that blows upon a vessel's quarter.

Rake—Masts are said to rake when they depart from a vertical position.

Rattled down—Having ratlines.

Ratlines—Ropes extending across the shrouds by which men ascend the rigging.

Reef—The space between reef-points.

Reef-pendant — A stout rope which passes through the reef cringles, by which a sail to be reefed is hauled down on the boom and secured.

Reef-points — Short pieces of rope by which the foot of a sail is secured when a reef is rolled up, or, as the nautical term has it, hauled down.

Reef-tackles—The tackles by which the reef-pendants are hauled down.

Reeve—To pass the end of a rope through a sheave hole, &c.

Ride—To lie at anchor.

Riding down halyards.—Men ascending the rigging, and by hanging on the fall of the halyards their weight assists in hoisting.

Ring-bolt—An eye-bolt with a ring through the eye.

Ring-tail—A narrow kind of studding-sail extended beyond the after leech of a fore-and-aft mainsail.

Round in—To haul on the fall of a tackle.

Round up—To haul in the slack of a tackle; being reverse the of overhaul.

Runners—The falls of a pendant, and a part of the tackle by which the pendant is set up.

Save-all—A water sail set underneath a studding sail, and sometimes under the main-boom and square-sail boom of fore-and-aft yachts.

Schooner—A fore-and-aft rigged craft with two masts. Sometimes schooners carry square topsails, and then are distinguished by being called "square-topsail schooners."

Score—A groove in a block, dead eye, spar, &c.

Scud—To run before a gale on a strong wind with only just enough canvas set to keep before the sea.

Scuppers—Apertures in the bottom part of a vessel's bulwarks, to let the water off deck.

Sea breeze—A wind coming from the sea blowing towards the land, in opposition to a land breeze, which blows from the land.

Seaway—On the open sea, especially referable when the waves are running high.

Seizing—The fastening of two ropes together by spun yarn, &c. Or the fastening of two parts of a rope into an eye by the same means. Also the small stuff used to fasten ropes together.

Service — Spun yarn or small rope "served" or wound round a rope over splicing or where chafing comes, &c.

Set flying — Said of sails not set on stays.

Set up—Said of rigging when it has been purchased up.

Severe—Secure, effectual; as, "Take a severe turn with that."

Shackle—A kind of ring with two eyes and a bolt, used for various purposes. There is one at every distance of 15 fathoms of a cable.

Sharp up—Yards are said to be braced sharp up when they are trimmed for close-hauled sailing.

Sheave—A pulley-wheel, over which a rope works inside a block, or in a recess in a mast or yard, &c.

Sheave hole—The hole for the sheave.

Sheer — The position of a vessel at anchor. A vessel is said to break her sheer when, riding by a single anchor, she brings a broadside strain upon the cable, and the anchor comes home; also the curve of a vessel's deck-line.

Sheets — Ropes by which fore-and-aft sails, &c., are trimmed.

Shrouds—Strong ropes extending from the mastheads to the sides of a vessel, to support the masts.

Sister block—A block containing two sheaves one above the other.

Slings—The rope or strop used to secure the centre of a yard to the mast to which the halyards are bent for hoisting.

Snatch block—A block with a slot in it through which a rope can be passed round the sheave without reeving. An iron band covers the slot.

Soundings—When the bottom can be reached by the deep-sea lead. To "get soundings aboard," is to run on shore.

Spinnaker—A modern adaptation of a jib-shaped sail, often seen set from the topmasthead and boomed out from the mast. It is made of light canvas, and hoists to the topmast-head, and is boomed out from the mast. Some cutters carry enormous spinnakers, containing in one sail nearly as much canvas as is spread in mainsail and topsail. A spinnaker is a very handy sail, and preferable to a squaresail in light weather.

Spitfire—A small jib used in fore-and-aft craft in very bad weather.

Square—Yards are said to be square when at right angles with the keel. A ship's sails or yards are said to be "square" when the head of the sails is nearly as long as the foot.

Square-sail—A sail occasionally used in fore-and-aft vessels when running.

Standing rigging—That part of the rigging which is kept set up or made fast, such as the shrouds, forestays, and backstays.

Starboard—The right-hand side of a vessel when looking forward.

Starboard helm—The tiller put the starboard side of a vessel, so that the rudder brings her head round to port.

Stays—Ropes used to support masts.

Staysail—A sail set upon a stay by hanks or hoops.

To stay—The act of going about or tacking.

Steady!—An order after the helm has been put to port or starboard, to put it no farther in either direction, but bring it back amidships. When the wind is fair, an order given to a steersman to "Steady!" is to keep the helm as it is.

Steeve—The rising a bowsprit has from a horizontal position.

Stem—The foremost part of a vessel's frame.

Stern-way—Moving by the stern, as a vessel often will when, through bad seamanship or other causes, she misses stays or fails in going about.

Storm-trysail—A small fore-and-aft gaff-sail, used in bad weather.

Strop—A rope formed into a ring, for encircling blocks, &c.

Tack—The lower weather corner of a sail.

To tack—To go about from one tack to the other.

Tackle—A purchase composed of blocks and a rope, for multiplying power.

Tail block—A tackle consisting of two blocks, to one of which is attached a length of rope for fastening to any object at pleasure.

Taunt—Tall.

Taut—Tight.

Thwart—Athwart; across. The seat of a boat.

Tiller—The bar of wood or iron by which the rudder is worked.

Toggle—A pin placed through the bight or eye of a rope to secure it round a stay, mast, &c.

Top a boom—To raise one end of it by hoisting on the topping-lifts.

Topmast—The next mast to the lower mast; in ships, the topmast is succeeded by top-gallant mast and royal mast.

Top-rail—The rail upon top of the bulwarks, supported on the stanchions.

Touch her—Luff and touch her; to come up close to the wind without shaking the sails.

Trestle-trees—Strong pieces of timber that support the cross-trees on the mastheads.

Traveller—An iron ring that slides up and down or along spars, whereby the sails are hauled into their positions.

Triatic stay—A stay that in schooners goes from masthead to masthead.

Trucks—Flat pieces of wood upon the top of masts, through which the signal halyards are rove.

Trysail—A small fore-and-aft sail set with a gaff; used in bad weather.

Up and down—The wind is said to be up and down the mast when a vessel is becalmed. Under such circumstances a wind is also said to be "dead on the masthead."

Vang—A rope for holding the foregaff of a schooner up to windward.

Vast!—Avast! Stop hauling, &c.

Wall-sided—A vessel is wall-sided

whose sides come up perpendicularly from her bilge.

Water-sail—A sail all set underneath booms in fine weather.

Wear—To come round with the wind until it blows on the opposite side. In tacking, a vessel is turned round against the wind.

Weather-helm—A vessel is said to carry weather-helm when, close hauled, she has a tendency to come up in the wind, and her tiller has to be kept up to keep her from so doing.

Weatherly—Said of a ship that makes little or no leeway, and that will sail within 4½ to 5½ points of the wind.

Windward—The weather side, or side on which the wind blows.

Yaw—A vessel is said to yaw when in running she flies off her course.

Yawl—A vessel rigged like a cutter, with the addition of a short mizen-mast.

Yoke—The lower cap on the masthead of yachts.

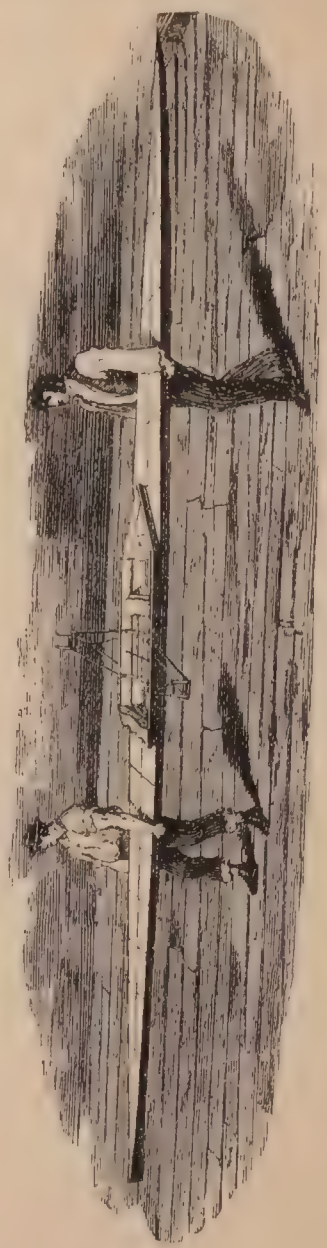
CHAPTER II.

ROWING, OR BOAT-RACING.

Sect. 1.—Varieties of Boats used.

The Boats used in racing, by means of the scull and oar, are chiefly at this present time the following—viz., first, the sculling outrigger; secondly, the pair-oared outrigger; thirdly, the four-oared outrigger; fourthly, the eight-oared outrigger; and fifthly, the gig, which may be either a pair, four, six, or eight-oared. Outriggers have now almost entirely superseded the old style of boats, in which the rowlock was fixed upon the wale-streak; but occasionally even now the rules of regattas compel their use; and at the sea-side gigs are often employed, or other descriptions of sea-boats. These, however, are the exceptions, and for racing purposes the first four varieties above enumerated comprise all that are necessary. The old wherry, the funny, the ran-dan, and the six-oared cutter, not outrigged, are now only used for watermen's purposes or for pleasure-parties; and, except for learning to row, are quite exploded as racing-boats.

The Outrigged Sculling-Boat, called also a "Clasper boat," from the name of those who introduced this variety, is the simplest form of all, and also a great improvement upon the old principle, as far as speed is concerned; but it takes a long time to learn to sit a racing-boat, and many upsets must be expected before that perfect command of it is attained which racing demands. This boat consists of two portions—the body and the outriggers, which are one on each side, opposite each other. In the old days of sculling, the boat was obliged to be wide enough to carry the rowlock on her wale-streak, but her water-line was not nearly so wide as the rowlocks themselves, and consequently, on the slightest roll, or in "lumpy water," she was much impeded in her course, and rendered still slower than she otherwise was, besides the impediment offered by the wind to lofty sides. In those days a wager boat was about 23 feet long by 3 feet 6 inches wide, or sometimes 2 inches wider. At the present time the boat itself is about 30 feet long by 10 or 12 inches wide; and when in the water with the sculler in her, she is seldom more than one inch, or one and a half, above its level in the middle, rising to three or four inches at the



OUTRIGGED SCULLING BOAT.

bows, and quite level with it at the stern. The engraving of a sculling boat here given shows these proportions tolerably accurately, and is strictly according to scale, but is calculated to

carry a 12st. man. The bows and stern are very fine and sharp, and the former has usually a thin edge of copper added to make t still more cutting. These boats are constructed without any keel, of a single sheet of cedar or mahogany in the middle, "scarfed" (or united by a splice with copper nails) at places not opposite each other, when the sheet is not long enough, and bent into the proper form by means of steaming. The boat from which the foregoing sketch was taken, is constructed of a single sheet of mahogany from stem to stern. When without a keel, the bows are cut out of the solid, in order to get the exact form wanted. The cedar or mahogany is about the thickness of a half-crown when sand-papered down and varnished, and is called "the skin" of the boat, which is strengthened by ribs of oak, inserted at stated distances, after she has been moulded on her mould boards; in the bows and stern they are merely thin pieces of oak, of the pattern of the section, with the centres cut out for lightness; while opposite the outriggers they are much stronger than elsewhere, in order to carry the irons which are bolted to them. On the top of the whole boat—with the exception of about three or four feet, varying according to the fancy of the builder—is fixed a deck or cover of thin mahogany or varnished canvas, supported by a light framework; thus making a hollow compartment at each end, which is rendered watertight by a bulkhead towards the middle, and any leakage is allowed to escape through this by means of a small hole fitted with a plug. The sculler sits in the vacant middle space or box, either on the deck or a little below its level, in which case the deck does not extend to his thwart. Around the space occupied by the sculler is a rib of deal called the "in-wale," outside which is the wash-board; and a board of a corresponding height is carried across in a pointed form in front of the sculler's back, serving to keep any water shipped in a swell from running into the central well where the sculler sits, protected from friction by a mat fixed on his thwart. A similar wash-board is also carried straight across at the sternmost end of this box. The in-wale is continued fore and aft on each side to the stem and stern, being firmly bolted to the ribs. A movable foot-board, called a "stretcher," is fixed for the feet of the sculler, and capable of being shifted by a simple but ingenious contrivance called "a rack;" and attached to this stretcher is a leather strap for the foot, which enables the sculler to bring his body up quickly, without bearing on his scull too much.

Such is the construction of the boat; next comes the part which is capable of application to pairs, fours, and eights, with very little variation; and one description will do for all, the main difference being that in sculling-boats the two outriggers are opposite each other, whilst in all others they are placed alternately, half on one side and the other half on the other, but each outrigger corresponding with a vacant space on the other side.

The Outrigger-Rowlock consists of four iron rods which are bolted to the side of the boat; the two middle ones to the strong timbers before-mentioned, and the two others to the wale-streak, where it is well supported by the thwart or deck fore and aft. These four irons gradually approach each other, being from 13 to 16 inches in length, and about one-third of an inch in diameter, of a section sometimes square and sometimes round; they are then riveted or forged to a double plate, about seven inches long and three-quarters of an inch wide, with a varying depth, which stands perpendicularly and lies parallel with the side of the boat. About three and a half inches of this plate is plugged with wood, upon which is nailed a thick piece of leather, and this is called the rowlock, being the part upon which the scull or oar lies. Before this piece of leather is a space about two inches long, and three or four deep, into which is jammed a wedge of oak, standing up considerably above it, and called the "thowle," or "thowle-pin;" against which the whole power of the sculler is exerted in making his stroke. Behind the leather, again, another and similar wooden wedge is jammed into a corresponding space, and this is called "the stopper," and is for the purpose of preventing the oar or scull from flying off the rowlock when it is pushed forward, or "on the feather," as it is termed. In this way there is left a square space, about the breadth of the hand, for the ordinary boat, and half an inch wider for those furnished with sliding seats, to be pre-

sently described, bounded before by the thowle, behind by the stopper, and below by the leather nailed upon the rowlock; and this space must be accurately adjusted to the reach and length of the sculler, being just wide enough to enable him to get sufficiently backwards and forwards, and also placed high enough to allow him to clear his knees. It must also be fixed at such a distance astern of the thwart that the sculler shall be enabled to get his scull as much back as he pulls it before it—that is, it must be in the middle of his reach, which varies much with different styles, according to whether the individual swings back more or less than he reaches forward over his toes. A piece of thick string connects the tops of the stopper and thowle, to prevent the oar or scull from pushing out. The weight of an outrigger sculling-boat, without sculls, is *said to be* sometimes not more than 30lb; this however is, I fancy, a slight exaggeration; and few are, I believe, really less than 38 or 40lb., when adapted to carry a man of 9st. 7lb.

THE SCULLS are made of white deal, and consist of the handle, the loom, and the blade, being altogether a little over 10 feet in length, up to 10 feet 4 inches. The handle and loom occupy the length from the rowlock to the middle of the boat, where they should overlap each other from four to six inches for over-hand sculling, in which one hand passes over the other; but this is sometimes avoided, because the rowlocks may be made wide enough apart to allow of sufficient length of loom without it, so that the length of the irons added to half the width of the boat gives the length inboard of the scull, or generally a little over two feet; but for this arrangement the boat must be at least 20 inches wide, and the outrigger must project 14 inches. The handle is made round for the width of the hand, but not too smooth, and is left as it comes from the rasp; from the handle to a little beyond the rowlock most sculls are square, with an oblong leather button nailed on to the upper part of the side corresponding with the back part of the blade, and just where the rowlock comes—indeed butting against the inside of the thowle. In the "Clasper" oar and scull, however, it is round and covered with leather, with a very peculiar button encircling three-fourths of the oar at this part, and projecting about an inch. Outboard the oar or scull is at first round or nearly so behind, and square before; then of an oval section; and finally ending in the blade, by gradually spreading out until it terminates in a breadth of thin wood about four inches wide, or sometimes even more. The oar or scull ought to be nearly balanced at the nut, but is always a little heavier outboard than inboard.

THE PAIR-OARED OUTRIGGER is built somewhat on the same model as the sculling-boat, but longer and wider, in order to carry the double weight. As the strain on these boats is not even on the two sides, owing to the alternate fixing of the outriggers, they are obliged to be built much stronger and heavier than the sculling-boat; and every foot in the length which the additional man requires to be added for his support in the water, also causes a greater tendency to weakness, and by consequence more strength of timber to give the adequate stiffness. Unless there is this last quality in perfection no boat will row well, because at the moment she is being impelled by the oar she trembles and twists, losing her proper form as well as taking a slightly serpentine course. The pair-oar is generally about 33 or 34 feet long, and 18 or 19 inches wide; but she may be proportioned to the weight of the men she has to carry. The covering-in of the bows and stern is generally of canvas instead of cedar. The increased length is given in the middle, where the vacant space, or "body," which is undecked, is long enough to receive two men instead of one, and, when steering is required, a boy to steer besides. This last addition, however, is only allowed in winding rivers, where it is almost impossible to keep a good steerage without this assistance. In the Thames such a thing is never seen in a race; but even there a devious course is often made, and the boat actually loses many yards in her erratic shoots to the right and left. The after-rowlock, usually called the "stroke-rowlock," is bolted to the left side, in front of this man's thwart; and between the two thwarts on the other side is bolted the "bow-rowlock." Sometimes, however, when the stroke-oar cannot row on the stroke side, the rowlocks are reversed, and then he is said to "row

stroke on bow side." The oars are in form merely enlarged sculls, except that the handle is a little longer, and the square of the loom is gradually rounded off into it for about five or six inches, which is for the accommodation of the inside hand. These oars are usually about 12 feet in length. The boats when loaded sit a very little higher out of the water than sculling-boats, there being generally about two inches between the water-line and the wale-streak; and, nike the former, they are composed of a sltreak or plank put on in sheets the breadth of each side, and generally in two lengths, scarfed about four feet apart on the two sides; so that one side is divided into two unequal portions, with the larger part aft, and the other has the larger part forwards. The skin is of the same stoutness and substance, but the ribs are much stronger; and they are carefully framed into the keel, which again is generally strengthened by a backbone, a perpendicular piece of deal running longitudinally along its surface, and rising at the thwarts to their under-surface, to which they are securely nailed.

THE FOUR-OARED OUTRIGGER is constructed just like a pair-oared boat, except that she is longer, being about 42 feet long, and 20 or 21 inches wide. At one time, these boats were built 48 feet long, and 20 inches wide only, even for a crew averaging 9st. 7lb.; but they are now built somewhat shorter and wider, and the alteration is found to answer better, for when so very narrow they offered no resistance to the depressing power of the stroke, and were buried in the water while "on the hand," to rise again in "the shoot," and thus to make a series of dips which were little calculated for a high speed. At first it was supposed that the only limit to the diminution of breadth and to the increase of length was the difficulty in getting the boat stiff and steady enough for her crew, but now it is discovered that she must also offer a sufficient resistance to the downpull, or, in other words, that she must be "floaty" enough to carry her crew. Hence the medium length and breadth which are now adopted. A rudder until lately was always added to four-oared boats, and there is in that case a thwart required for a light coxswain, though in racing it is usual for him to sit on the floor of the boat for greater steadiness. The Americans however, introduced a plan by which the rudder is moved by the foot of the stroke-oarsman pressing on a lever which works it by means of strings and pulleys. There are seldom more

FOUR-OARED OUTRIGGER.

than 18 inches allowed for the coxswain between his thwart and the stretcher of the bow-oar; and here he must sit cross-legged, or as well as he can, with a hand on each gunwale or wale-streak. The rudder is attached to the whole

depth of the stern, and is worked by two long cords, which run through pulleys on the deck or canvas covering of the stern. These are called the "yoke lines," and they are attached to a cross-bar of iron or wood, called "the yoke," which stands out on each side of the stern, at right angles to the rudder, and thus, when pulled, turns it to the same side. When first these boats were introduced, they were almost always built of four or five streaks, or planks, on each side, but they are now commonly of a single streak, either of cedar, or white or yellow pine. The oars are similar to those of the pair-oared boat, except that the middle pair are a trifle longer in some cases; but in many fours all the oars are almost exactly alike in length, and where the crew are nearly matched in strength this ought to be the case. The annexed view given of a four-oared outrigger is from an exact drawing according to scale of a small outrigger four-oared boat 21 inches wide.

THE EIGHT-OARED OUTRIGGER has, again, a longer form, but is exactly on the same principle of construction, with the additional space necessary for four extra men. She is generally now about 55 or 56 feet in length, by 2 feet 2 or 3 inches in breadth, according to her crew in both cases. Some have reached even 70 feet, but they are too weak when of that extreme length, and the above proportions are now considered the best. The rowlocks are disposed four on each side between the thwarts, but approaching nearer to the forward one than to that behind them. Here, also, they must be suited to the stroke of the crew; but the usual and average length from the sternmost edge of the thwart to the inside of the thowle-pin is 16 inches. The oars in this kind of boat vary in length; Nos. 8 and 7 being a little longer than No. 2 and bow; but the four averaging 12 feet, while the four middle oars are of equal length, and about 5 or 6 inches longer than that of the stroke, according to the weight and power of the men. In all cases the steadiness of these boats is in proportion to the width and flatness of their floor, which, if it is a segment of a circle, causes the boat to be very "crank," and inclined to roll on the slightest inequality in the rowing. Salter, Clasper, and Jewett are the fashionable builders of the day.

IN EXAMINING any of these boats the great point is to ascertain if they are stiff—that is, if they twist readily on being supported unequally; and, when turned over with their bottoms upwards, that they are quite straight, and the two sides exactly alike. It is true that few boats are mathematically so, and a correct eye will generally detect some little deviation from the precise correspondence in the two halves; but unless very obvious, it is of little consequence. A crooked boat is the result of a strain, and always interferes with a boat's way, requiring constant steerage, however slight, against it, and thus also impeding the speed. Boats so curved are said to be "screwed."

THE GIG is on a different construction altogether, being shorter, wider, and without outriggers. She has a square stern, and a strong gunwale, into which, at the place of the rowlocks, two wooden pins (thowle-pins) are wedged. In river gigs the oars are similar to those already described; but in ships' gigs they have no nut, and are only held in their proper places by the art of the rower. Gigs are built in the old-fashioned way with five or six streaks, and are either of deal or oak, the former being the lighter, the latter the stronger and more lasting material.

SECT. 2.—THE SLIDING SEAT.

THE SLIDING SEAT, which was introduced into this country from America about three years ago, is now universally adopted by rowing men for racing purposes, whether in sculling-boats, or in "pairs," "fours," or "eights," having been demonstrated to enable the rower to do his work with much less distress over any distance beyond a mere spirt.

In order to make the following remarks intelligible to those who are now taking up this investigation for the first time, it is necessary to describe the exact nature of the sliding seat, which is as follows: In the first place a much wider thwart must be fixed in the boat in lieu of the old one—the increase being about four inches in each direction, fore and aft. On the top of this thwart is fixed a glass rod (patented by Mr. Searle), to receive an ivory "traveller," which is firmly screwed to the under-side of the actual seat. The

result is that the latter can slide backwards and forwards with great facility for a distance varying, with different men and in different boats, from six to eight and even nine inches; and of course the seat carries the rower with it. The extra weight is about 1lb. per man. As first used, the "traveller" moved in a brass tube, slit to receive it; but this was abandoned in consequence of its soiling the flannels in a very disagreeable manner. The theory of its action is as follows, as pointed out for the first time by myself in an article published in the *Field* of March 1st, 1873, prior to which time a most unintelligible controversy had been carried on for some weeks.

It is generally supposed that the art of sliding in a boat is as difficult to learn as skating on the ice; but this is altogether a mistake, as I proved by experiment. Selecting a well-known amateur who had not sculled in a wager-boat for the previous two years, and had never used the slide, I requested him to get into Mr. Gulston's sculling-boat (that gentleman having kindly placed it at our disposal) and try the invention. The stretcher was too short for my friend, and he was altogether out of practice; but nevertheless, after a few minutes, and as soon as he had gained sufficient confidence to lay out, he began to slide, and, though he did not of course arrive at the perfection which one is accustomed to see when the boat is in the hands of her owner, he was yet able to make a very fair exhibition. The fact seems to be established that the very act of using the straps to bring up the body draws the seat forward; and when this is followed by the pressure of the feet on the stretcher, the rower is of necessity driven back again to his former position. To the casual observer it would appear impossible to get the hands over the knees, which when the body is full forward are no doubt too high for that important act; but, on watching the process carefully, it will be seen that the arms on going forward, being at once straightened after the swing, pass the knees before these are raised to their full height, while in going backwards—the arms being of course still unbent—the legs are straightened, and the knees lowered before the hands come near them. These points must be carefully remembered in examining the various details of the process, which are no doubt of an extremely complicated nature.

It has been found in rowing that a long, strong, and comparatively slow stroke of 34 or 36 will win over a distance, although it will be beaten in a spirt by a quick, sharp, and comparatively weak stroke of 42 or 44 to the minute. Hence, length of stroke is to be desired—within certain limits, however, because it is clear that it cannot be advantageous to lengthen it so far fore and aft as merely to spread the water sideways without driving it back. In the old seat a very long stroke could no doubt be given by the aid of great reach forward and corresponding swing; but of late years it has been found that this could easily be overdone, the reason being twofold—first, the excessive swing causes the modern boat, with its narrow floor, to dip too much for speed; and secondly, the power of the extensor muscles is applied disadvantageously both at the beginning and the end of the very long stroke. The latter point requires an anatomical explanation to demonstrate it; but although, with the aid of diagrams, this would be easy enough, I shall on the present occasion ask the reader to take it for granted—as any anatomist will admit that it must be.

Now let us see how this is altered by the new invention. Putting a practised oar into a tub four, I ascertained, by careful measurement on land, that, as compared with his stroke on the fixed thwart, his stroke on the sliding seat is nearly 18 inches longer in the water, *and even then is not nearly so long as he could make it if he were not prevented by his stopper and thowle.* In other words, he can drop his oar into the water, and at once use his extensor muscles to advantage, and at the end of a sufficiently long stroke finish without dipping his boat, *and without the loss of power which would of necessity have resulted in the same length of stroke on the old seat.*

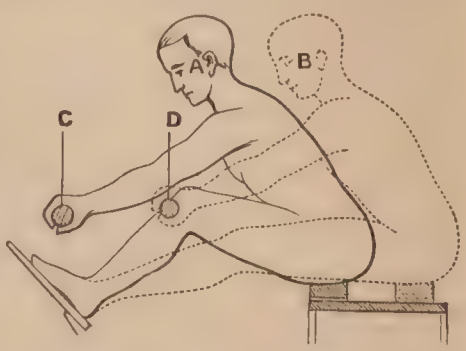
Here, then, is an enormous mechanical gain. The long stroke—an admitted boon, though in the old boat counterbalanced by an attendant evil—is here obtained without that evil, and at the cost of the leg muscles only, which are naturally capable of doing far more than has hitherto been allotted to them. But, beyond this, a most powerful set of muscles are brought

into play for a purpose altogether different from that in which they have heretofore been engaged. I mean the extensors of the legs, which form that enormous mass of flesh to be found on the upper half of the thigh, and which are about twice as big as the *glutæus maximus*, and nearly four times as efficient, because the latter works to a disadvantage, while they have the extra leverage afforded by the knee-cap. The superiority of leg work over arm work will be at once manifested if only the legs can be brought into play. As a practical illustration of their power, let a man be placed on his back so that he can point his legs in any direction, as a modern ship's turret does her guns; and who will dare to attack him with the arms? Why, the legs, when bent ready for the antagonist, could hurl him away to the nearest wall or other obstruction.

On the old system the necessity of a good use of the legs has always been insisted on, and no doubt with propriety; but a moment's consideration will show that, after all, their capacity for useful work has been very limited indeed. To prove this it is only necessary to admit that their two extremities on a fixed seat are also fixed points, or very nearly so. By the flexion and extension of the back on the pelvis the socket in which the thigh-bone plays is allowed to move about an inch backwards and forwards; by so much and no more the knees are flexed and extended; and this practically amounts to nothing. What the legs do is simply to maintain the fulcrum in a fixed position on the thwart, for the extensor muscles of the back to act on; and this is all they can do, for the simple reason that if they did more they would make the rower slip backwards on it—which no one will contend was ever done except by the tyro.

But in the sliding seat a certain portion of the work hitherto done by the extensor muscles of the back is transferred to the extensors of the thigh, which drive the rower bodily backwards, and, while so doing, or in as far as they so do, convert the muscles of the back into passively resisting agents, instead of actively swinging the body backwards, as they were formerly obliged to do without any assistance. The following diagram will serve to explain how this is effected.

The position of the body, A, shows the beginning of the stroke, the handle of the oar being at C. The extensors of the legs then contracting, straighten the knees, and by so doing drive the body back to the position B (shown in dotted lines), without any active contraction of the muscles of the back, or of the *glutæi maximi*, which merely passively prevent the natural tendency of the back to give way. During this time the handle of the oar has been brought back to D, or exactly the same length as the sliding seat has travelled,



and during that movement of we will say nine inches, the knees, being straightened, have got out of the way of the hands, which easily pass, as shown by the dotted lines. But, although it is manifest that this amount of work has been transferred from the usually distressed muscles of the back to those of the hitherto neglected legs, the former have, *pari passu*, been aiding, and have carried the shoulders back by causing them to rotate on the axis of the pelvis, the tuberosity of which is fixed on the seat, exactly as was done in the old style. With the exception of this utilisation of the leg-muscles for a new purpose, all is conducted on old principles, though to greater advantage in point of leverage; and there is not so much tendency to shirk work as was formerly the case, because there is not so much tendency to distress. In fact, it is found practically that notorious shirkers do reasonably good work in a boat furnished with sliding seats, for the simple reason that their physical power is now capable of mastering the oar, which was on the old system altogether beyond it.

I must not omit to draw the attention of my readers to the peculiar action of the extensors of the body on the pelvis. The power of these muscles is applied

by means of the short arm of the lever (the tuberosity of the pelvis above alluded to), acting through the fulcrum existing at the hip-joint on the long arm afforded by the body and arms when attached to the oar. The substitution, therefore, of a strong and direct push backwards by the legs, for this comparatively weak but quick kind of lever, is an enormous gain in power, though a loss in velocity.

From the foregoing remarks, it will be apparent that the following conclusions may be safely arrived at:—

1. That with a seat sliding nine inches, the stroke can be lengthened about eighteen inches in the water, without at the same time causing the power to be applied so disadvantageously as with the shorter stroke on the fixed seat.

2. That with a sufficiently long stroke the body is not bent either forwards or backwards nearly as far as without the sliding seat. (By "sufficiently long" I mean such a length as will act most efficiently in giving speed to the boat.

3. That as the force exerted by the muscles of the back cannot be applied to advantage when the body is extended either backwards or forwards to the extreme limits allowed by the human frame, it is a mechanical gain if the most efficient length of stroke can be given without resorting to those extreme limits.

4. By the substitution of the moving force residing in the powerful extensors of the thighs, in lieu of a corresponding power residing in the extensors of the back, a new store of muscular action is brought into play, to the relief of that which was often seriously distressed in the old style.

5. That in practice it is found that the flexion and extension of the knees prevent cramp, and afford great relief to the rower.

6. That, although the same power as previously existed is now used more advantageously, and in addition a new power is brought into play, yet, as this is at the expense of velocity, a quicker spirt cannot be obtained by the sliding seat; but a better pace can be kept up for a longer time, and consequently, for all ordinary racing distances, the sliding seat must beat the fixed one, other things being equal.

It is manifest, from the above explanation, that as the body does not swing nearly so much with the sliding seat as with the fixed one, in proportion to the length of stroke, the eye accustomed to the old-fashioned swing is liable to be deceived, and to lead the spectator to believe that less work is done. In all changes this obstacle is found to impede their introduction. When the outrigger was invented, the quick recovery of the oar and the full swing of the back, at that time much insisted on, became useless, and, being therefore abandoned, led the previous school to decry the innovation, in spite of the increase of pace afforded by it. So with sliding seats, they no doubt are attended with a diminution of swing; but there is no reason whatever why a straight back and falling shoulders, with elbows well kept in, should not be insisted on; and indeed, as the back has less to do, there is no excuse whatever for bending over the oar—about the most unsightly and fatal fault that can be committed.

With regard to the arms, they are little affected by the invention, but are to some extent no doubt, because, being passive during all but the finish of the stroke, in proportion to its length will be the duration of their stage of comparative quiescence. By measurement of the celebrated Mr. Gulston's stroke I have found that it is increased from 10ft. 4in. to 11ft. 7in., or about one-eighth, while the arms contract only during about 2ft. of those distances. It follows therefore that the active stage of contraction, as compared with the passive one during which the arms are only kept straight, is as 2 to 3 with the old seat; while in the sliding seat the proportion is reduced very nearly to 2 to 4.

Sect. 3.—Rowing and Sculling.

Rowing, as the most simple of the two, must first be described. It may be defined as the propulsion of a boat through the water by means of oars, the water being the fulcrum, the row-lock (as part of the boat) the weight to be moved, and the hand giving the power; the whole being a lever of the second kind in mechanics. The oars are numbered from the bow towards the stern—Nos. 1 (bow), and 3, 5, and 7 in an eight-oared boat being on the right or starboard side; and Nos. 2, 4, 6, and 8 on the left or port. In all the small

modern outriggers, the rower sits nearly in the middle of the boat—that is to say, about on that part which is one-third of the length of the thwart from the side opposite to his rowlock. Here he sits bending his knees, separating them widely, and placing his feet, with his heels close together, firmly against the stretcher, exactly in front of the middle of his fork. Thus he sits quite square to his work, and will then swing and slide backward and forward exactly in the line of the boat, or parallel with it. If his feet are nearer the side of the boat than they ought to be, he will swing towards the middle, or "row into the boat;" and if they are too near the middle line, he will "row out of it;" both being bad faults, and making the boat rock considerably. The stretcher should be adjusted to such a length that the oar will just clear the knees, and the strap should be buckled tightly over the feet. The distance of the seat from the "work" (as the rowlock is called) is altered by the sliding seat. On fixed seats the average distance was about 13 inches from the centre of the thwart or 11 from its front edge. Taking still the centre as the guide, this is correct; but measuring from the front edge when full out, there is a difference of 2 inches—that is to say, the sliding seat can be brought up to within 9 inches of the thowle, and in many boats considerably nearer. The importance of attending to this point can scarcely be overrated.

The seat or thwart should be moderately high, so that the rower may have a good command over his oar, but low enough to allow him to get well over his knees. The lower the seat, the more likely the rower is to drag the boat under the water; and the higher he sits, if he can only avoid rocking the boat, the lighter and smarter is the stroke, and the less the boat dips when on the hand. The great object is to pull the oar straight through the water, taking sufficient hold of it, but not depressing the boat in doing so; and on no account raising the body from the swing by bearing downwards upon the loom and handle. This last is a fatal error, and will invariably stop any of the boats of the modern build, though in the olden time, the "dig into the ribs," with a great jerk, was of service, because the floor of the boats then in use was so wide that no ordinary power in this way had any effect in sending her down, and an eight-oar, though only 50 feet long, or even less, was rarely seen to dip. It is very commonly supposed that round backs are caused by a high seat, but I have seen more attending a low one than the reverse; and, theoretically, I should expect such to be the case. At Oxford, where for many years the seat was higher than elsewhere, and also the rowlocks, the round back is unusually rare, as compared with other places. I do not mean to say that there are not many round backs there, but that there are not so many as at Cambridge and on the Thames, and that the proportion of good backs is very great.

When all these points are satisfactorily adjusted by the instructor (and they cannot be too early attended to, since a man is often more bothered at unlearning bad habits than in learning good ones), the young rower may be put into a steady pair-oared boat, and may then be set to pull as wildly as he likes, making him, if possible, swing straight, and well back and forward, and inducing him to lay out all his power, regardless of "crabs." The boat should for this purpose be a steady one, and not an outrigger; and a companion who will not mind a few splashes and a little knocking about should be put in to "row stroke" slowly, but as long and as strong as the new oar can imitate. The teacher must steer, as the tyro never pulls two strokes alike, and the stroke-oar can hardly keep him straight without the rudder. During this lesson, the instructor must see that the young oar has his hands properly placed, the outside one grasping the handle, with the thumb above it, while the inside hand lays hold of the loom just where the round-off part joins the square, and keeping the thumb beneath. This allows of the elbows being kept close to the sides, and of their being well straightened immediately after the conclusion of the stroke, and before the body has had time to recover itself fully. The stroke finishes with "the feather," which the learner must catch by watching and imitating; and this is immediately succeeded by the restoration of the oar to its former state, in doing which the wrist is straightened and the hand and elbow thrust rapidly

forward at the same time, with a forward action of the shoulders, so as to carry the loom away from the body at once, and then when the arm is straight the body follows as rapidly as it is required to do. The head is kept well up, and the eyes looking at the back of the man next in front. The chest and belly full and prominent; the back slightly arched forward, easily, and gently; the shoulders playing freely forwards; and the hands reaching well over the toes. If all these evolutions can be carried out in the first lesson the pupil is a very apt one, but the teacher need not be disappointed if he fails in inculcating more than the mere power of swinging and of avoiding "crabs," which are the result of the water catching the oar when there is considerable way on the boat, and turning its blade flat, so that the rower cannot bring it out, and by the impetus of the boat is driven backwards over his thwart.

These are the fundamental principles of rowing; but the delicacies of the art consist in dropping the oar smartly into the water and rowing it through exactly at the proper depth, laying out the strength in the right way, and at the right time, and feathering neatly and at the proper distance from the water. The depth at which the oar should be brought through the water should be such as just to cover the blade, and the stroke-oar should always keep to this depth, in which respect he should be imitated by his pupil, as far as his strength will allow; but if he is too weak to do so, he had far better not dip his oar as deep as his stroke, so that he pulls it through as much water, rather than dig deep at first, and then be compelled to finish his stroke in the air in order to keep time. Both the oars ought to take in the same length of water, and to enter and come out at the same moment; now, granting this, if both are pulling at their best, the stronger must dig deeper than the weaker, and by consequence the above rule will necessarily apply.

The Chief Faults in Rowing are—first, the bending forward over the oar at the end of the stroke, called "meeting the oar," which is attended by the taking in too small an extent of water; secondly, making the latter part of the stroke in the air, which is the usual expedient in "shirking," often also accompanying the first fault; thirdly, rowing round—that is, not dropping the blade at once to its proper depth, but describing the segment of a circle, and thus having to bring the oar up out of the water to feather, by which the boat is dragged under, and her way impeded; fourthly, rowing with the elbows bent, either when on the stroke, or the feather, or both; fifthly, keeping the elbows out from the sides, which is only bad in appearance, and many of our best watermen have been addicted to it; sixthly, looking at the oar to avoid crabs, which only leads to uneven swinging, and often to the very thing which is intended to be avoided; and, seventhly, looking out of the boat at passing objects, or at competitors in the race. There are other faults in appearance, such as dropping the chin upon the breast, rounding the shoulders or back, &c.; but they do not so much affect the real work done as the above, and are often seen in a good workman, whose oar itself, if watched, would be pronounced to be that of a finished oarsman.

Sculling is practised exactly on the same principle as rowing except that both sculls being managed by one man, he has only one hand for each. He sits in the middle of the boat, and pulls them exactly as described in rowing with the oar, taking especial care to pull alike at both, and entering, as well as feathering them, precisely at the same moment. A neglect of this precaution is attended with danger; and, in fact, in light outrigger-boats it is only by the practised hand that the time can be so nicely regulated as to admit of their use without an upset. The sculler is, first of all, obliged to have recourse to a wide and steady boat; and when he can manage her well he may venture upon an outrigger; carefully stepping into which, while she is held by a waterman, he sits down and gets all right, while still steadied by his assistant, and he only ventures to give up his aid when he has his sculls out ready balanced, and at first lying with the blades flat on the water. After once getting away, he had better row on pretty hard, as these boats are more difficult to paddle in than to row fast—that is, short of a spirt, but rowing with good power. A

straight course is kept partly by watching the stern and keeping it in a line with some object; and partly by turning the head round (not the shoulder), when, having taken a sight, the stern is set to some fresh object, and maintained in a line with it till the next look ahead. This is one of the most difficult parts of sculling, and few men are able to steer well in a race without the assistance of a man behind, in another boat, or, if in a narrow river, running on the bank, who keeps directing the course by calling "Pull your right," or "Pull your left," as the case may require. In matches, an eight-oar generally accompanies each sculler, with a man of light weight in her bows, who is able to direct to a nicety the course to be kept, and the sculler has only to lay out to the utmost of his power; and if this is done by both it is fair enough, and leads to an avoidance of fouls which are the bane of the rowing-match.

THE MANŒUVRES in all boats are alike in principle, and consist of holding water, backing water, paddling, rowing hard, spirting, easing (or stopping), and starting, each of which shall be separately described.

HOLDING WATER is necessary when the boat is to be suddenly stopped, in which case both sides of her crew reverse the blades of their oars, and, according to the pace at which they have been going, drop them more or less into the water, holding their arms straight, and keeping the inside hand firmly upon the loom to prevent the water sinking the blade too far under, and thus causing "a crab." It is a very difficult manœuvre to execute well, and is not often wanted in racing, except when a buoy is to be turned, in which case the object is to row rapidly up to it, then "Hold water all" till the way is stopped, after which one side still holds, or even backs water, and the other rows the boat rapidly round. Practice is the great point here, as the principle is simple enough, and nothing but long practice will enable a crew to turn a boat in the small space and time which I have seen at Manchester, where the boats row at a racing-pace up to the buoy, and, if possible, the stroke-oar catches hold of it. At all events, they stop as if by magic, and are round in about 15 seconds. Sometimes one or two oars hold water to enable the other side to row them round; but in confined spaces this is generally effected by one side backing and the other side rowing, which brings a boat round in her own length, or nearly so.

BACKING is effected by the oar held as in the last manœuvre, and used as in rowing, but exactly in the opposite direction, *pushing* the blade through the water, and *pulling* it through the air. The blade should be neatly feathered at the moment of leaving the water: and great care should be taken not to dig too deep, and to back *in good time*, and with the same length of stroke. There is no possibility of swinging beyond the perpendicular, and it should not be attempted, but all the work must be done before the thwart, reaching well over the toes. When a whole crew back water neatly and in good time, it is a very pretty sight, and the boat goes a better pace than might be expected; indeed, I once saw a "Leander" four, at Erith, back water as fast as an ordinary boat could row, and with a neatness and good time which I have never seen equalled.

PADDLING is the portal to excellence in rowing of all kinds; and as it enables faults to be detected, so it allows them to be corrected. It consists in rowing at about half power and quickness—that is to say, with from twenty to thirty strokes per minute, according to their length. At this pace every fault is very visible, the goodness or badness of the time and the keeping stroke are at once manifest, and the faults generally are exaggerated. It is now that the style of rowing should be fixed upon, and, if a crew are practising, that all should follow it as far as they are able. I have already described the proper mode of holding the oar, which is the same in all rowing; but in giving a good style the following points should be inculcated.

The first to be considered is the PREPARATORY ACTION, in which every man should have his rowlock just wide enough for him to touch the stopper with his oar when at his full reach forward, and he should, in starting, commence at that point, the hands being well over the toes, and the blade of the oar at right angles to the surface of the water, and about a foot from it, more or less, according to that of the stroke, who must be rigidly imitated. The body is bent forward *at the hips*

only, and between the thighs; the back being straight, the shoulders freely extended, and the head well up, with the eyes looking horizontally forwards.

Secondly, the DROPPING OF THE OAR, previous to pulling, which must be rapid yet light, and without the slightest splash or chop.

Thirdly, the PULL, which commences almost the instant the blade touches the water, because the elasticity of the muscles and of the oar are first to be overcome; and when they are so, the oar is deep enough and the pull should commence. This is a very nice and difficult point to calculate, and nothing but practice will give the exact moment at which to begin to use the back; but to a casual observer, watching even a finished oarsman, it appears as if he began to pull as soon as he had dropped his oar; yet it is not really so, and no power is actually laid out until the blade has reached its full depth. At that instant, the body, which has been falling backwards for an exceedingly short space of time, is checked by the arms, *which are all this time straight at the elbows;* and the back is now exerted to drag the oar through the water until it reaches its full extent of swing, which is a little beyond the perpendicular, on the average, but more or less according to the difference of style. As soon as the full swing is attained, the arms bring the oars home by bending the elbows, keeping them close as they pass the nips, and throwing back the shoulders at the same time, when the stroke is completed by depressing the inside wrist and elevating the knuckles, in which the outside hand also follows, causing the loom to rotate on the rowlock, and changing the direction of the blade from being vertical to nearly a horizontal position as it leaves the water. At the conclusion of the stroke the root of the thumb of the inside hand should touch the ribs (the particular one which is struck depending upon the height of the rowlock and thwart), the back is straight and inclining a little beyond the perpendicular, with a graceful fall of the shoulder-blades, accompanied, as a matter of course, by a fulness of chest, and the head carried easily, but with the neck not at all bent forwards. When the knees are held wide apart they are very slightly brought together during the stroke; but when they are maintained in apposition throughout, as in the "Clasper style," they do not change at all.

Fourthly, the RECOVERY, which consists in first straightening the wrist, by which the oar is at the same time rotated and thrust forward—for the second action is a necessary part of the first; secondly, of a straightening of the elbows and a darting forward of the shoulders; and thirdly, of the bending of the body at the hips as far forward as possible over the toes, with the blade of the oar held in the vertical direction, which brings it to the exact point from which we started.

The whole of these acts may be executed slowly and lightly, which is called *paddling*. When they are performed with great power, yet with a long stroke, and as much quickness as is consistent with lasting the distance to be rowed, it is called "rowing hard;" and when the velocity is the highest of which the crew is capable for any distance, however short, it is called "spirting." The average number of strokes in an eight-oar for paddling is about 25 per minute; for rowing hard, about 38 to 40; and for a spirt about 50.

EASING AND STARTING are of course the exact opposites of each other; the former being merely the ceasing to row, in which all should stop exactly at the same time; and the coxswain should in all cases give the word, "Easy, all," at the end of the stroke, when the oars should not be wholly recovered from the feather, but should be halfway between the horizontal and the perpendicular, and at right angles to the boat, so that as soon as the way is a little off her they may lie flat on the water, and thus prevent her being unsteady by their powers of balancing. STARTING is effected by all rowing off at the same moment, beginning with the position described in the previous page, or within a short distance of the utmost reach forward, and giving two short strokes and a long one when intending to get quickly off. In ordinary cases, however, it is better to paddle off with the usual steady and slow stroke.

THE BEST LENGTH FOR THE STROKE is that which *all* in the boat can well maintain without reaching so far forwards as to be unsteady in the drop,

or swinging so far back as to bear too hard upon the oar, and thus occasion a downward pull upon the boat. It is of no use for the stroke-oar to overreach his crew, though at the same time he should be able in practising to excel them all, in order to improve them and draw out their powers to the fullest extent. It is clear that the only limit to the length of the stroke is the reach forward, which is limited by the bend at the hip and the swing backward, which must be confined within the bounds dictated by a careful observation of the several styles of the men composing the crew; hence, if any of them are slow and clumsy in recovering their oars, the swing must be kept within due limits, for fear of their failing at this important time; and the same with the reach forward.

Best Style of Stroke.—In laying out the stroke, the grand and essential point in light boats is not to jerk; but beginning with a delicate drop into the water, and without a splash if possible, the rower should catch hold at once, and as soon as possible consistently with the avoidance of an absolute jerk, put out all his power until the resistance begins to be removed by the near approach of the blade to the surface, when the whole attention and also the muscular effort of the arms are absorbed in making the feather; and consequently there is, or ought to, be, no vibration or jerk at either end of the stroke, and yet the root of the thumb should be brought close up to the ribs. The feathering is strictly the turning the blade from the perpendicular to the horizontal direction, by a raising of the knuckles towards the back of the forearm, and consequent bending the wrist; but the oar is said to be "on the feather" from the time that it is thus turned until it re-enters the water, although the direction is recovered as quickly as possible after the change is made from a backward to a forward motion.

It is in this part and in the swing that there is so much difference of opinion; some contending for a very quick feather, some for a very high one, with a sort of hovering in the air at the end, called the "Oxford feather," and some for a slow feather, without this raised rover. In the time of the old heavy boats, quickness of feather was all-important, because they would not continue their shoot long when off the hand; and two boats nearly matched in a race might be seen alternately leading, according as they were at the moment on or off the stroke; consequently the time occupied by the oar returning in the air from the stroke was comparatively lost, because the boat was losing her way all the time, and in a very slow stroke was almost stationary; but in the modern narrow boats the speed, after the stroke is finished, or "the shoot," as it is called, continues for a considerable period of time; and if, while this full velocity lasts, the oars are dropped into the water in a clumsy manner, she may actually be seen to stop, as often, in fact, really happens in a young crew trying to row faster than they ought. It is therefore now found that a stroke that does great execution in the water, without laying any great stress upon the quickness of feather, is the most telling one; and that strength applied in the proper way, together with a finished drop into the water and a clean feather, is the essence of the art. In all quick strokes the feathering is necessarily also quick, and, without any attempt at increase of pace in that department, is quite quick enough: and hence there is no necessity for the old caution, "to be quick forward." This avoids a great expenditure of power, which formerly was laid out in saving the time lost in the shoot; and it is only one of the great advantages of these long, light, and narrow boats. If they are handled with skill, and not rowed too deep or jerked, they are beautiful in their shoot, and it is scarcely possible to detect the slightest alteration in their speed at any moment.

Again, these boats require that the swing shall not be too far back, because in recovering from this long swing some weight must be thrown upon the oar, and the boat is made to dip bodily, from her narrow floor affording too slight a resistance. A very little beyond the perpendicular is therefore the proper swing in most cases; though in some few the power of recovery is so completely mastered independently of the oar or scull, that the full and long swing, as of old, is developed without the dip, as was exhibited to perfection in that celebrity of his day, Mr. Casamajor, and just before his time in a clever sculler well known in the north, Mr. Dobson. The former of these gentlemen was a most elegant sculler

as well as a most powerful one, and exhibited the perfection of form in every respect, with the most extraordinary reach and swing, and without the slightest dip of his boat. Mr. Dobson was still more extraordinary, because he swung even farther, with a great reach also, and with an odd twist of his shoulder; and yet, though very fast in smooth water, and of course very powerful, his boat's shoot was without the slightest dip. It is clear, therefore, that swing is not necessarily bad, but that it requires great skill to combine it with the proper recovery; and hence, in an amateur crew, as it is difficult to meet with anything like perfection in all, it is better not to attempt to carry it out to the extreme, but to swing only about two-thirds of that amount.

The preceding remarks were written before the introduction of the sliding seat, but they are now more patent than ever; and their truth was demonstrated in a remarkable manner in the University Boat-race of 1875. With a much greater expenditure of force and a quicker stroke the Cambridge crew were much slower than the Oxford, simply because, in attempting to get a quick catch of the water, the oars were entered with a jerk, and the boat absolutely stopped for a short interval. Being alongside in a steam launch I could see that she was much faster off the hand than on, which ought never to be the case, and is in itself a proof of some glaring defect in the rowing. The stroke-oar of the Oxford boat, though physically weak, was enabled by using his power to the best advantage, assisted mainly by the sliding seat, to develop great pace and keep it up for the required distance, whereas the Cambridge crew were soon burst, because they were laying out their strength in a way which gave them no equivalent return. The example thus afforded will always be a standing proof of the superiority of good style over brute strength in rowing and sculling.

Straps.—Certain very high authorities (for instance, the author of the "Principles of Rowing") object to the use of straps, as causing the doubling forward of the body on the oar; but it appears to my humble judgment that these gentlemen have confounded the *post hoc* with the *propter hoc* in their conclusions. Straps and light boats came in together, and doubling forward came in soon afterwards; and they say that this fatal defect is caused by straps, because their use was followed by the defect; but I suspect that this unseemly habit is the result of the want of resisting power which is now felt by the light boats, and for which straps were invented, and not of the straps themselves. In the old heavy boat a man could almost raise himself off his thwart in the pull; and in the Thames wherry it was common enough to see the waterman actually showing daylight under his seat of honour. But when the light boats were introduced, it was found that it was not only impossible to execute this extreme manœuvre, but that the attempt to carry out the old dig into the ribs, which at the same time raised the body partially, was attended with a drag of the boat under the water, and so was opposed to her progress through it. In order to avoid this difficulty, and to enable the rower to raise himself without bearing on his oar more than enough to feather it, straps were introduced; but I never yet saw any one use them while meeting his oar. The bending at this time has nothing to do with the thighs, which are the parts steadied by the strap, but it is entirely *at the loin* where the arch forward takes place; and so far from requiring a strap to execute it, I have invariably found that the absence of one from the stretcher does not interfere with the trick. Meeting the oar is a sign of weakness in the back, or of a tendency to shirk, the one being often involuntary, and the other becoming so after a time. Whatever the cause, it is a habit which is very difficult to cure; and when weakness has produced it, wholly impossible. Here the back has not *power* to bring the oar through the same quantity of water in the same time as the stroke, and therefore the oar is allowed to be brought through the latter part of its course by the arms alone; or, in fact, is almost kept stationary, and the back meets it so as to be ready for a start before-hand in the feather, and thus to have less to do in that part of the work as well as in the stroke. Now, as it is shown that the back comes forward to meet the oar while its stroke is being finished by the arms, so it is clear that the arms pull the back for-

ward, as well as pulling the oar back, and that, *consequently, the strap is not wanted for this trick*, and if not wanted it is not likely to be used. There is, however, another observation of these gentlemen which is invaluable, and ought to be written in letters of gold over all boat-builders' yards; it is this—"THE USE OF VERY LIGHT BOATS BY YOUNG OARS IS DESTRUCTIVE TO THE ACQUISITION OF GOOD STYLE." Straps are now almost invariably used.

KEEPING STROKE is the imitation of the stroke-oar by those behind him, in the power used, and in the length and depth of water taken, in which particular, if they exactly follow him, they are said to "keep stroke." A shirker cannot keep stroke, though he may keep time; and it is only by watching the oar, and the work done by it, that the coxswain can detect this fault. It is not so unpleasant to the ear as the defect in time, but it is quite as fatal to the good progress of the boat, and, indeed, sometimes more so, because the variable ending of the stroke is of more consequence than the want of time in beginning it, or rather in feathering, which is the process by which time is marked. The speed of the boat is entirely dependent upon the swinging and sliding together of the men, and their laying out their strength at the same moment, to the same degree, and in the same direction. These acts being simultaneous, time must be kept, as the *major* includes the *minor;* but the converse does not by any means always hold good. So important is keeping stroke, that a crew of men pulling well together will always beat a crew of better men who row in various styles and without simultaneous action.

KEEPING TIME is the feathering of the oars, and their recovery, executed exactly together by a crew; and it may be carried out to a tolerably full extent by a crew, some of whom are accomplished shirkers, while the others are doing good work. Still the practised ear will generally detect a slight want of rhythm, for though the time is pretty good, there is a difference in the sound produced by an oar doing its duty from that made by a shirker. This will lead the "coach" to examine the oars themselves, and he then sees how they perform, and at once detects the offender: though in an eight-oar there is great difficulty in examining those in the fore part of the boat, and they can almost defy detection if clever in their way. For this reason of late years the coaching has been carried on from the saddle at Oxford and Cambridge, and from a steam launch on the Thames, whenever a crew for an important event is in preparation.

Besides these directions there are many minute yet important points which will be found detailed in "The Arts of Rowing and Training," by "Argonaut."

SECT. 4.—STEERING.

THE COXSWAIN'S duty is by no means the least important in boat-racing, and he often makes a considerable difference in the length of water rowed over, and in the amount of stream to be rowed with or against. For ordinary practice, the coxswain, unless he is also the captain of the crew, need not be very efficient; but I am fully persuaded that no boat's crew of more than a four-oar can be properly trained, except by a coxswain who is also captain, or, at all events, by some one who has full power while in the boat. In four-oar racing-boats the coxswain should not weigh more than 7st., and few boats as now built carry much more than that weight with sufficient buoyancy. In an eight-oar he may be 9st., or perhaps a few pounds over. It is seldom that a good head can be obtained on a body of less than 7st. in weight; but there is no doubt that every pound tells in a boat as well as on a horse. Nevertheless, good steering balances any weight up to that amount, and it would be better to give away even another stone than to put an inefficient steerer into the responsible office which he fills in a sharply-contested race. It requires considerable nerve to keep a boat in her course when pressed close by another, and yet the giving way often entails the loss of the race. The great cause of the failures in steering which are so often seen, is that the coxswain has not been allowed that amount of practice *with the crew* which his office requires. Very often he has only been in the boat once or twice, and sometimes he has never steered half a dozen times in any boat at all. The trainer has usurped the place, because he has been wanted to "coach" the

men ; but the coxswain wants teaching as much as the oarsmen, and if not allowed to be in his own boat, he ought to have practice in another.

The grand principles of steering are, to keep the course which is laid down from the first, with as little meddling with the yoke-lines as possible ; to keep these taut, so that the rudder is quite fixed and incapable of shifting, and when compelled to use them, to be careful to do no more than is absolutely necessary, so as to avoid having to rectify an overshoot to the right by steering again to the left. In going round sharp points, if the men pulling the outside oars are stronger than those pulling inside, they may be called upon to pull harder—thus, "Pull, bow-side," or "Pull, stroke-side ;" but if they happen to be the weaker half of the crew, and they are liable to be afterwards overdone, it is better "to ease" the other side. Either of these is better than using the rudder too strongly, which impedes a boat, while it also keeps the men doing their utmost ; and it will be found in practice that a boat will go round a point in less time by easing one side than by steering round with the full force on, whilst at the same time the strength of the men is husbanded. The coxswain should also study the stream, and take advantage of the slack water if against it, or of the full stream if with it ; and this he must do according to his position in the race, which will be constantly varying in different contests and localities. In every case he should steer over the course several times beforehand, and should make every object perfectly familiar to him at the first sight. His words of command to the crew are, "Pull, all," "Ease, all," "Pull, bow-side," "Pull, stroke-side," "Pull, bow," or No. 2, or 3, or stroke, as the case may be. "Back water, all," or any one, or two, or either side ; and the same with holding water. "Look out," when any obstacle is in the way ; and "Ship oar," or oars, directed to any one, or all With these words of command he manages the boat and crew, and if he has a knowledge of their proper duties and modes of executing them, he "coaches" or trains them in addition.

CHAPTER III.

BOAT-RACING—(*continued.*)

Sect. 1.—Training a Boat's Crew.

Selection of the Men.—In directing the choice of a boat's crew, it will here be understood that the men to be selected from are all in good health ; but in the chapter on training for pedestrianism (page 592), further advice is given for preparing a man out of health to undertake training of all kinds. At first sight it may appear that in rowing all below the waist is idle ; but this is by no means true, for the legs and thighs take their full share in the muscular exertion going on. Many mistakes have been made in picking men, from this error in judgment ; for it has been found, when perhaps too late, that good knees and thighs are required as well as good arms and shoulders. This is easily explained by a reference to the work which is to be done, and by examining the framework which has to do it. Now, then, what is that work? It consists in pulling an oar or scull through the water, by the muscles of the arms and back. But what enables the power called into play by the arms and back to act upon the boat? Why, the resisting and pushing power of the legs and thighs, without which the body would glide off the thwart, and fall helplessly into the boat. Hence it is manifest, that just as much as the arms generate the power by pulling against the water, by so much exactly will the legs convey that power to the boat by pushing against the stretcher.

In selecting men for this beautiful and healthy exercise, it should therefore be borne in mind that the following points are essential, though, of course, this, like all similar rules, admits of exception :—First and foremost, I should look to the moving powers—the arms, shoulders, and back. These

should be muscular, with good bony wrists, straight elbows, powerful and pliable shoulders, and above all, a good, strong, muscular loin. Without this last point the strength of arm is of no use; the body, instead of drawing the oar to it by the muscles of the arm, is itself drawn forward over the oar, and the stroke is rendered ineffective. Nothing is more difficult than to foretell, by examination, the exact degree of strength which any individual form is capable of displaying; but, with regard to the back and loin, it is almost impossible to form any useful opinion without actual trial; for so much depends upon early habits of various kinds, that no conclusion from the formation can possibly be arrived at. It is seldom that any one can say, with anything like certainty, that a particular individual shall make a "good oar;" but the contrary may often be affirmed, and it may generally be prognosticated, that an awkward, slow, and very high-shouldered man will prove useless in a boat. Next to these points, I should see that the legs and thighs (without being too heavy) should be sufficiently well developed to do their work. If too muscular, it is only so much extra weight to carry, and they should rather be below than above the proportionate size as compared with the arms. This form has been apparent in most of our best watermen, who have generally been remarkable for good upper works, as compared with their lower extremities. After the moving powers, it is needful to consider the state of the lungs and the heart. The wind should be naturally good, free from wheezing or cough; and the heart should be healthy, and free from palpitation or excitement. This can only be ascertained by trial; and indeed, that is the best mode of arriving at an opinion on all the different essentials for this as well as all other bodily exercises.

With regard to size and weight, much must depend upon what is to be done. I am now alluding to the choice of a boat's crew; as for single contests such selection is generally made by the sculler himself, and after many and repeated trials. It is seldom, nowadays, that a man more than 13st. in weight is found to "pull his weight;" and 12st. 7lb. is generally the top weight in an eight-oar. This is the result of experience, as no theory on the subject is worth a straw; but it has certainly been ascertained that all development of frame above that weight is accompanied with an increase of weight out of all proportion to the muscular power. With the old tub-like boats which were formerly in vogue before Clasper's improvements were introduced, it was necessary to have more weight and size at the end of an oar than are now found to be useful. The breadth of floor also was such that the increased weight did not bury the boat so much as it now does, and consequently, the attendant disadvantages were not so great as at present. With regard to the lowest weight which is desirable in an eight-oared boat, I am inclined to think 10st. is the point which should not be passed without strong reason for it. The difference between the bow and the middle oars is now much less than it used to be, and the weights ought, consequently, to be much nearer. My own belief is, that a difference of two stone is quite as much as ought to be allowed; and that if more than that is given, the oars will not be pulled through the water *in the same time, and with the same power*, without which no boat is done justice to.

Apportionment of the Day's Work.—After selecting the men who are to form the crew to be trained, it is desirable, if by any means it can be accomplished, to keep them together day and night; at all events they should take their runs and meals together, and should never, especially at night, be free from surveillance. In most cases it is better to take lodgings near the river; but when the banks are low such a situation is not desirable, and the nearest high and dry spot should be preferred. It is commonly supposed that in training early hours are requisite, and with those who have been all their lives accustomed to them no doubt they are; but when the habit has been different, I think it much better to allow a moderate indulgence in the morning's bed rather than attempt to break through long-established custom, to which the constitution has been inured. If the training is in the height of summer, it is desirable to get through most of the work in the cool of the morning and evening; but if the weather is not very oppressive, the plan, in my

opinion, is not a good one. As a rule, therefore, I should advise the following, subject to variations, according to the time of the year and the state of the weather. All should turn out of bed at eight o'clock; they should be well sponged all over with cold water, or they may take a mere plunge into the river and out again. On no account should they remain in the water even for five minutes. They should then be well rubbed with a coarse towel, and be dressed by half-past eight. From this time till breakfast, at nine o'clock, let all take a smart walk, and come in to the meal without fatigue, but prepared to enjoy it. The best kind of food for the various meals is given under the head of "Pedestrianism," and the reader is referred to page 601 for full particulars on this subject. After breakfast, a couple of hours may be passed in any innocent but not violent bodily amusement, such as billiard playing, skittles, quoits, &c., which will bring us up to half-past eleven A.M., at which time the crew should be put together in the boat, and should get their morning's practice, which will on the average take them till half-past one. On getting out of the boat, all should take a good run, varying in speed and distance according to the directions of the trainer. At two o'clock, or half-past two at latest, after being rubbed dry and the linen changed, dinner may be announced, and this meal may occupy the time till three or half-past three P.M., according to circumstances. After dinner a gentle stroll or a book may be indulged in till five or six o'clock, when another hour may be consumed in practising on the water. On coming in from this evening row, supper may be got ready, at eight o'clock; and at nine or ten o'clock to bed.

RUNNING EXERCISE.—The speed and length of run which are to be daily maintained in order to obtain that condition of the lungs and heart which shall enable the oarsman to go through his task, must in great measure depend upon the state of the individual. In these directions I am assuming that the health is good, that a fair amount of exercise has been habitually taken, and that the body is prepared to go through its task without risk. I have already directed that all should take a walk for half an hour before breakfast; in some instances a smart run of three miles will be about the best distance; and two or three running together will add to the excitement, and take off from the weariness of the task. I think a short spin across country, with moderate fences or ditches, or small towing-path gates, better than a dull steady run; and the pace should vary from five miles per hour to an occasional spirt at the top speed. It is never, however, to be maintained at such a pace as to produce perspiration to any extent; and if the weather is very warm, the hours should be early in proportion. The dress should be the usual boating flannel trousers, with a light woollen jacket, and should never be so heavy as to weigh down the animal spirits. Nothing is of more importance than this, for in training much depends upon keeping up that buoyancy of feeling which man in a state of high health ought always to experience. This quantity of running exercise will in most cases be enough; but sometimes when the wind is thick, with a very strong constitution, a longer and slower walk or run should be taken in addition, beginning an hour after breakfast, and keeping it up to the time for practice at half-past eleven, but taking great care to be cooled down before getting into the boat. There can be no doubt, however, that there is not the same necessity for severe running now as there was in the days of the old-fashioned boats. Indeed, it appears as if the men of the present generation would not bear it, if attempted, and that in many cases very little running can be practised with advantage. In these matters, that is to say, in regulating the amount of exercise for each individual, nothing but experience will avail.

SEPARATE PRACTICE.—It is seldom that a trainer has the opportunity of acting upon the raw material; he finds certain oarsmen ready-made to his hands, and he has to make the most of them, whether bad, good, or indifferent. The first thing to be done is to select a "stroke," and to do this requires considerable judgment. I am supposing that the trainer has this power of selection, which I am quite sure he ought always to possess. Now it must be remembered that the best oar is not always fit for the "stroke" oar; many men are exceedingly good behind another, who yet have so little judgment, and in some instances are so

deficient in "time," that they throw out a crew directly they are placed next the coxswain. A "stroke," therefore, requires to be not only a good oar, but of indomitable pluck, so as to be able to get up a "spirt" whenever wanted, and to rouse an exhausted crew by the force of his example. He ought also to possess great presence of mind, in order to enable him to avoid hurrying his stroke when pressed, and a keen perception of time, so that he shall not vary it more than is absolutely required. Having made this selection of a "stroke oar," the next point is to allot to each man his proper place, which can seldom be done without a few trials. In ascertaining the relative strength and lasting powers of the individuals composing the crew, there is nothing like a strong pair-oar, in which the two men whose powers are in question may be placed with the captain; and then, by pulling against one another, it is easy to discover, not only the strength, but the pluck of each. But this trial can only fairly take place between men of nearly the same weight: for a man of 13st. may be able to pull round a 10st. man, and yet not "pull his weight" nearly so well; seven pounds may fairly be given or taken, but more than that should be allowed for.

Having, as nearly as possible, decided upon the place which each man shall occupy, the next point is to bring every man up to the standard of the "stroke oar" in style and strength. For this purpose a waterman is almost imperatively necessary, for reasons which will presently appear; and one should be selected whose style resembles that of your own "stroke oar," and they (that is, the stroke and waterman) should, if possible, have rowed together, so as to be easily substituted one for the other. Now, it will be recollected that in the daily routine I have left the hours from half-past nine till half-past eleven A.M., and from four till six o'clock P.M., without any specific occupation. These hours I should employ as follows:—In the first place I should put my "stroke oar" and No. 7 in a pair-oar, and take them out for an hour's gentle practice, so as to thoroughly accustom the latter to the style and time of the former. This is of great importance, because unless No. 7 in an eight-oar, or No. 3 in a four-oar, keep good time, and pull in the same style, and with the same hold of the water as the "stroke," it is hopeless to expect a good result. Quickening on the stroke is a very common fault in either No. 3 or No. 7, and it should be checked at once, since it sets the whole bow-side out of stroke with their opposites. It consists in these men bringing their oars out before that of "stroke," and is easily remedied by making them take more water; or, if unable to do that, taking a deeper hold; or, if finishing in the air, as is often done, then making them pull their stroke through. Let the task be repeated every other day, or even daily, till the two row perfectly together without the slightest tendency to quicken. Next let the trainer put No. 6 into the boat with the waterman for another hour, and after dinner let No. 5, and if possible No. 4, each have an hour's practice with him. Thus, by taking half the crew out in pair-oars daily, each man will be modelled upon the form of your "stroke" and come under the trainer's eye every day; and he may then be easily cured of any bad habits which in an eight-oar can hardly be detected. Without a waterman this can scarcely be effected, or at all events not nearly so well; but, with his aid, more progress will be made in one week than could be effected in a month's practice confined to an eight-oar only. It is manifestly out of the question to expect your "stroke" to go out with each man of the crew; yet either he or a substitute ought to do so.

Every one ought to copy the style of "the stroke" in the minutest particular; and yet it is impossible for a man in the bows of an eight-oar to see the back of the "stroke," or even his oar, without looking and most probably rowing out of the boat. Indeed, it is a rule which ought to be diligently followed, that each man should carefully avoid looking at his own oar, or any other object but the back of his nearest man, and consequently he cannot possibly mould himself upon the form of any one but that man. The result is as follows:—"Stroke oar" rows well, but with a fault, which we will call *a*; No. 7 catches the style of "stroke," including fault *a*, and superadding fault *b*; No. 6 perhaps exactly imitates No. 7, and transmits both the faults *a* and *b* to No. 5, who, in addition, gives to No. 4 his own little pet fault *c*, and so on. From this it results that

poor No. 2, or bow-oar, instead of being the neatest oar in the boat, is likely to inherit all the faults of the whole crew, if his practice is confined to the eight-oar. By practising, however, as I have advised, separately in the pair-oar, they, one and all, adopt the style of the "stroke," or of his substitute the waterman; and then when put in the eight-oar, they require no "coaching" to make them row well together, or at all events, only an amount of practice much less than would otherwise be needful.

It is a well known fact that in copying statues by means of plaster of Paris, &c., if the copy is again cast and the operation repeated, in process of time the most absurd distortions occur; because each cast differs, however slightly, from the original, and these trifling differences being transmitted through several copies, at last are accumulated into a grand table of deformity. But by always having recourse to the original cast, and keeping that for the express purpose, no further difference is perceived than is inseparable from the nature of the material and the want of care in the workman. Just so is the case with the imitation going on in a boat's crew during practice; and therefore I have advised the above plan, which I have found of the greatest possible use when "coaching." By its adoption I would undertake to get any eight men, however raw, to row well together in a fortnight's practice, provided they are in earnest, and at the commencement have sufficient command of their oars to avoid crabs, &c.

Every coxswain must have experienced the difficulty which there is in explaining to a man while in the eight-oar the nature of any defect in his style, and the best mode of remedying it, and has been compelled to postpone the lecture until the practice is over. But then it is truly a lecture, and not a demonstration, since he cannot do more than explain theoretically what he means to be remedied. This, however, he does as well as he can, and at the next "practice" has the mortification of finding that the fault is still committed, or perhaps replaced by one in the opposite extreme. In the pair-oar, however, the rowing may be stopped a hundred times, if necessary, till the directions of the coxswain are fulfilled; and it is very seldom, in a man of ordinary capacity, that a second demonstration is required.

With a very raw crew it is better to postpone the getting into the eight-oar at all until the whole crew have been each separately drilled, either with the "stroke" or with the waterman; and at this period, when they all go out separately, the "stroke" may very well undertake the tuition of Nos. 7, 6, and 5, while the waterman takes Nos. 4, 3, 2, and bow. If each of these has an hour's practice, the trainer will consume, including the time lost in altering stretchers, &c., at least eight hours per day, which is quite enough for any man to go through. In this case more time must be given by all to running and walking, and the amount of work must be severally apportioned by the trainer to each; for, as the practice on the water is necessarily limited to an hour a day each, instead of two hours and a half, or even three hours, a greater amount of work must be done on the land in order to get the body into the highest condition. By the above plan I think it will generally be found that even a raw crew may be fit to be put into an eight-oar two or three days after first coming together; but even then they will require the occasional pair-oar practice which I have recommended.

[For the treatment of blisters, chapped hands, &c., see page 602, *et seq.*]

Practising Together.—At page 654, I have allotted two hours for the morning practice, and one for the evening, which will be about the maximum amount of work needful for a crew. The minimum must depend upon a variety of circumstances, such as weather, state of forwardness, both in condition and training, &c.; but I think that beyond three hours a day no crew will derive much benefit. On first starting, it is prudent to allow matters to take their own course for a couple of miles, keeping up a steady, long, and rather slow stroke, and only demanding that all should row as steadily and well as they can. I have known great discouragement most unnecessarily given by the coxswain or "stroke" finding fault at the first trial. It cannot be expected that men, even if good oars, shall get settled into their places at once; and I have often found that by a little patience and encouragement the same crew which

for a mile or two could scarcely avoid "crab-catching," have finished their morning's practice by an exhibition of a totally different character. As soon as the boat begins to go along tolerably steadily, it will be time for the coxswain to look out for the particular oars which require correction, and he must now at once proceed to repeat those cautions and directions which he has previously given in the pair-oar.

It will be generally found that after an hour's steady "paddling" the crew begins to improve rapidly, and then it will be better to rest for eight or ten minutes. Every man should carry with him a piece of clean sponge, and he may during this interval dip it in the water and wash out his mouth, which will greatly refresh him; but no water should be swallowed, or not more than a tablespoonful at all events. After this little break, during which stretchers, &c., may be altered, the remainder of the practice may be filled up by another steady "paddle," with the same long steady stroke, not too quick through the water or on the feather, so that all may keep up to it without distress. It is of the greatest importance towards getting a crew to row well together, not to let them at any time row in a careless or slovenly manner, and not to practise them when so tired as to have lost their control over their oars. Hence, I think, rowing twice a day far better than doing all at one time; and I also think the first period should be longer than the second. The evening row should be conducted on the same principles as the morning's work—stopping in the middle only just long enough to wash the mouth out, or to make any necessary alteration in the boat.

In a few days it will be found that by continuing these long steady "paddles" the rowing is so much improved that a "spirt" may be attempted; but this should be only when the coxswain has cast his eyes down the oars and sees all fully under command; he should then ask "stroke" if he is ready, and, on receiving an answer in the affirmative, let him call out to the crew to prepare for a spirt. This is very necessary in the early days of training, as it puts all on their guard, and after the long, steady practice, the attention has been in some measure taken off by the uniformity of the stroke, and the mechanical nature of the work. This spirt should be continued till the boat begins to rock, when it is better to "Ease, all," than to attempt altering the stroke into a milder one. I have generally found that for the first ten days two spirts in each practice were enough, continued for about forty or fifty strokes, and giving one just before the break in the middle of the practice, and the other at the end. By steadily and patiently proceeding in this way, it is astonishing what improvement may be effected in ten days.

At the end of this time it will be necessary to begin to row the distance which is to be the scene of the future contest. Whatever that distance may be, whether with tide or against stream, that same water should be, if possible, rowed over twice a day, and the time should be carefully taken by the coxswain. The reason for this last proceeding is, not only for his information and guidance, but also for the purpose of keeping the whole crew up to their work. It is, in fact, rowing against time, instead of against another crew, and there is consequently some emulation excited, which is one grand principle in training. It is not perhaps desirable, nor is it in fact possible to distress men as in a race; they will naturally take sufficient care of themselves; but it is quite imperative that they should lay out their strength during the whole distance in the same proportion as "the stroke." At first the start for this should be very steady, but after a few days it may be made exactly as in the actual race; and, let the distance be what it may, the pace should be regulated just as would then be done, avoiding bursting the men, but at the same time keeping the stroke as long, strong, and quick as the condition will allow it to be maintained. The coxswain and stroke must arrange this together, the latter feeling his own strength, and judging how far it will last, and also how much he is "backed up" by those behind him, whilst the former is able to see if any one or more is so much "baked" as to require consideration. In all this, however, considerable experience is necessary; yet one grand point is, that these two should thoroughly co-operate.

As I before remarked, it is not my purpose to go into the instructions for using the oar or sculls; I shall therefore

conclude this part of my subject by the assertion, that if the above plan is followed strictly for three or four weeks, by a careful coxswain, with good judgment, assisted by a good stroke, and a strong useful crew, the rowing together and the condition will be as good as that crew will be capable of without a very much longer period of training. It will seldom be possible to keep men together longer than this; and if all are tolerably good oars at the beginning, and in good condition, half this time will be long enough. But in the above estimate I am calculating on nearly all being unfinished oars, though in a forward state or condition. In a pair-oar or sculling-boat the same amount of work must be done; and there also the division of practice into two periods is better than one. In both cases the trainer should either be on horseback or in another boat alongside, either sculling or steering a four-oar, which latter is necessary if the trainer is unable to use the sculls, since the weight in the stern will tell too much in a pair-oar to allow of its keeping up with a sculler or a pair-oar without a sitter.

Treatment on the Day of the Race.—In every respect let the walking exercise and breakfast be as usual; then amuse your crew and keep them together as well as you can till about two hours before the race, when they should each have a good meal of roast leg of mutton and bread, with a pint of beer, or whatever drink they are accustomed to. The quantity should be rather within the usual allowance, especially if the race is to take place in less than two hours; and I am satisfied that mutton is far better for the wind than beefsteak, and roast better than a broil. Just before stepping into the boat, a wineglass of egged-sherry may be given to each man; but though it is very commonly used, I am not at all sure that it is really beneficial. No doubt it gives power, but in many cases it appears to injure the wind, and in delicate stomachs it often produces nausea. Unless, therefore, it has already been proved to agree, it should be cautiously given. If, however, a second heat is to be rowed on the same day, egged-sherry, or some similar compound, is required, and should then be given about half an hour before the second race; but if two hours intervene, a very light meal of mutton and bread, with half a pint of beer, may be taken as soon as the effects of the first race are gone off, and then the glass of egged-sherry on getting again into the boat.

Sect. 2.—Regattas.

Regattas, as boat-races are called, are again becoming as popular as they were some years ago, when an effort was made to introduce them very generally upon the inland waters of England, after which there was a temporary lull. The inequality of the contest, in most cases, renders these races more uninteresting to the unlearned spectator than any other kind of race; and the consequence is, that, failing to attract a crowd, they did not keep hold of the attention of the people; but Henley still holds its front rank as an amateur, and the Thames National as a waterman's regatta. Oxford and Cambridge still maintain their annual contests on their respective rivers, and meet for the Inter-University race at Putney, which every year attracts a larger and larger attendance, the crowd being as great as is usually seen at Epsom on the Derby Day.

In the contests of the University boat-clubs on the Cam and Isis, the races are stern-races, all the boats starting in order one after another, with a clear boat's length between them; and if any boat can "bump" the one before her, the boat so bumped must row into the bank, and give up her place to the successful one. At the next contest she takes one place lower down, and the other has her place; and so on, often for several bumps in succession. A boat may even bump two, one after the other, in the same race; but I believe more than this number has never been accomplished.

The Management of Regattas is under a committee, who elect stewards, a secretary, and umpire; the several duties of which will be explained by the Rules, which vary at different places; but the annexed will suit all but the Universities, which have their own fixed rules and regulations, depending upon the unusual condition of rowing one after the other, instead of abreast.

Sect. 3.—General Rules of Boat-Racing.

The Old Laws, as settled and approved by the Universities of Oxford and Cambridge, and the Principal Boat Clubs in London.

1. All boat-races shall be started in the following manner:—The starter, on being satisfied that the competitors are ready, shall give the signal to start.

2. If the starter considers the start false, he shall at once recall the boats to their stations; and any boat refusing to start again shall be distanced

3. No fouling whatever shall be allowed.

4. It is the province of the umpire, when appealed to, but not before, to decide a foul; and the boat decided by him to have fouled shall be distanced.

5. In case of a foul, the umpire, if appealed to during the race, shall direct the non-fouling boat to row on, which shall, in every case, row over the remainder of the course, in order to claim the race.

6. It shall be considered a foul when, after the race has commenced, any competitor by his oar, boat, or person, comes in contact with the oar, boat, or person of another competitor; and nothing else shall be considered a foul.

7. Any competitor who comes in contact with another competitor, as defined in Rule 6, by crossing into his competitor's water, commits a foul; but when a boat has once fairly taken another boat's water by a clear lead, it has a right to keep the water so taken.

8. A boat shall be held to have a clear lead of another boat when its *stern* is clearly past the *stem* of that other boat.

9. It shall be held that a boat's own water is the straight or true course from the station assigned to it at starting; but if two boats are racing, and one clearly takes the other's water by a clear lead, it shall be entitled to keep the water so taken to the end of the course; and if the two boats afterwards come into contact while the leading boat remains in the water so taken, the boat whose water has been so taken shall be deemed to have committed a foul; but if they come into contact by the leading boat departing from the water so taken, the leading boat shall be deemed to have committed a foul.

10. The umpire shall be sole judge of a boat's straight or true course during every part of the race.

11. If in any race in which more than two boats start a foul takes place, and the boat adjudged by the umpire to have fouled reaches the winning-post first, the race shall be decided as the boats come in; but if the boat fouled does not come in first, or if the umpire is unable to decide which boat has committed the foul, the race shall be rowed over again, unless the umpire shall decide that the boat which came in first had a sufficient lead at the moment of the foul to warrant its having the race assigned to it.

12. Whenever the umpire shall direct a race to be rowed over again, any boat refusing to row again shall be distanced.

13. Every boat shall stand by its accidents.

N.B.—At Eton, the water assigned a boat at starting in a race belongs to it throughout the race, and any other boat which takes another's water, and in any part of the race afterwards gets fouled, is disqualified.

The above Laws are now superseded by the following code:—

The Laws of Boat-Racing, as settled and approved by the Universities of Oxford and Cambridge, and the Principal Boat Clubs in London, on the 20th of March, 1872.

1. All boat-races shall be started in the following manner:—The starter on being satisfied that the competitors are ready, shall give the signal to start.

2. If the starter considers the start false, he shall at once recall the boats to their stations; and any boat refusing to start again shall be disqualified.

3. Any boat not at its post at the time specified, shall be liable to be disqualified by the umpire.

4. The umpire may act as starter, as he thinks fit; where he does not so act, the starter shall be subject to the control of the umpire.

5. Each boat shall keep its own water throughout the race, and any boat departing from its own water will do so at its peril.

6. A boat's own water is its straight course, parallel with those of the other competing boats, from the station assigned to it at starting, to the finish.

7. The umpire shall be sole judge of

a boat's own water and proper course during the race.

8. No fouling whatever shall be allowed; the boat committing a foul shall be disqualified.

9. It shall be considered a foul when, after the race has commenced, any competitor by his oar, boat, or person, comes in contact with the oar, boat, or person of another competitor; unless, in the opinion of the umpire, such contact is so slight as not to influence the race.

10. The umpire may, during the race, caution any competitor when in danger of committing a foul.

11. The umpire, when appealed to, shall decide all questions as to a foul.

12. A claim of foul must be made to the judge or the umpire by the competitor himself before getting out of his boat.

13. In case of a foul, the umpire shall have the power:—(*a*) to place the boats—except the boat committing the foul, which is disqualified—in the order in which they come in; (*b*) to order the boats engaged in the race, other than the boat committing the foul, to row over again on the same or another day; (*c*) to re-start the qualified boats from the place where the foul was committed.

14. Every boat shall abide by its accidents.

15. No boat shall be allowed to accompany a competitor for the purpose of directing his course or affording him other assistance. The boat receiving such direction or assistance shall be disqualified at the discretion of the umpire.

16. The jurisdiction of the umpire extends over the race and all matters connected with it, from the time the race is specified to start until its final termination; and his decision in all cases shall be final and without appeal

17. Any competitor refusing to abide by the decision, or to follow the directions of the umpire, shall be disqualified.

18. The umpire, if he thinks proper, may reserve his decision, provided that in every case such decision be given on the day of the race.

THE MAIN ALTERATION in the new code consists in adopting the Eton plan of assigning its share of the course to each boat throughout. At first sight this would appear to render the duties of an umpire very simple, and in a comparatively narrow run like the Thames at Eton it really does so, but on the metropolitan course the same conclusion cannot be arrived at, because the lines which separate the courses are very indefinite, and the umpire would often have great difficulty in deciding whether the foul took place in the water of A or B. For instance, A with a sufficient lead takes B's water, who then attempts to decide the race at once by rowing into A's boat, while in B's course; A, being in danger of a foul, steers out, but is rowed into on or near the line of separation. Here the umpire's duty is a very difficult one, and more so than when he had only to decide whether the clear lead had been taken before the foul. Nevertheless, as the new rule makes the two sides of most courses (and notably of that from Putney to Mortlake) more even, it is on the whole a great improvement.

SECT. 4.—THE RACE.

THE RACE is managed under the direction of the starter, the umpire, and the judge. The starter is either in a boat or on the shore; and he either starts the boats by the word "Off!" or by the report of a pistol, according to agreement, if a match, or the decision of the committee, if a regatta. It is usual to ask the crews, "Are you ready?" when on receiving a distinct answer from each in the affirmative, the signal is given. The umpire then has the boats in charge till the conclusion of the race; and his duty is to see, in case of a foul, which is the offender, and to decide according to Rules 5, 6, and 7. He is usually rowed in an eight-oar by watermen; and he should be a little astern of the last competitor, and on his outside quarter. Sometimes, in narrow rivers, the umpire is on horseback on the bank, but on the Thames he is usually in the leading steamer. The judge is stationed at the winning-post, and has simply to name the winning boat.

SECT. 5.—LENGTH OF RACING COURSES.

Barnes Regatta Course, 1½ miles.
Bedford Regatta, ¾ mile.
Bristol, from Hotwells to Bristol, 1½ miles.
Boston, River Witham, 2½ miles.
Cambridge, 1 mile 487 yards.

Chester, 1¾ miles.
Clydesdale, 1½ miles.
Cork, 3 miles.
Derby, 1 mile.
Dublin, 2¼ miles.
Durham, 1 mile 300 yards.
Ely, Littleport to Adelaide Bridge, 2½ miles.
Henley-on-Thames, 1 mile 2½ furlongs.
Hereford, 1 mile 586 yards.
Hollingworth Lake, 3 miles.
Huntingdon, 1¼ miles; for time races, 3 miles.
Ipswich, 3 miles 700 yards.
King's Lynn, Champion Course, 2 miles; Prince of Wales's Course, 1¼ miles.
Kingston-on-Thames, Seething Wells to Kingston Bridge, 1¼ miles
Lincoln, sculls and pair-oars, ¾ mile; four-oars, 1½ miles.
London Bridge to Old Swan, Chelsea, 4 miles 3 furlongs.
Manchester, 2 miles.
Newark, Devonmouth to Magnus Boat House, 1½ miles.
Oxford, Abingdon Lasher to Nuneham Cottage, 1½ miles.
Oxford, Iffley to the Barges, 1¼ miles.
Putney to Barnes Bridge, 3 miles 6 fgs.
" Chiswick, 2 miles 4 furlongs.
" Hammersmith, 1 mile 6 fgs.
" Mortlake, 4 miles 3 furlongs.
Richmond, Sion House to Richmond Bridge, 1 mile 7 furlongs; and Cross Deep, Twickenham, to Richmond Railway Bridge, 1 mile 5 furlongs.
Stockton-on-Tees, Portrack Course, 4 miles; above Bridges, 1½ miles.
Stourport, 1¼ miles.
Sunderland, North Hylton to Spa Well, 1 mile.
Tewkesbury, 2 miles.
Tyne, High Level Bridge to Waterson's Gates, 1 mile.
Tyne, High Level Bridge to Meadows House, 1¾ miles.
Tyne, High Level Bridge to Armstrong's Crane, 2 miles.
Tyne, High Level Bridge to West Point of Paradise Quay, 2½ miles.
Tyne, High Level Bridge to Scotswood Suspension Bridge, 3 miles 713 yards.
Tyne, High Level Brigde to Lemington Point, 4½ miles.
Walton, 1 mile.
Warwick, 1½ miles.
Worcester, 1 mile.

Sect. 6.—Purchase of Boats.

Racing-Boats are now built at various places, Clasper having first broken the charm which before his time was supposed to reside in University or Thames-built boats. Messrs. Searles were long the chief London builders, but they are now out of fashion; Messenger of Kingston, and Sims and Robinson of Putney, also build a considerable number of boats. Taylor of Newcastle was for some time the fashionable builder of fours and eights, but Salter of Oxford, Clasper of Oxford, and Jewitt of Dunston near Gateshead, are now admitted to be at the head of the trade in that department.

The Price of gigs and racing-boats is one guinea per foot of length, if built to order; but they may generally be obtained at a somewhat lower price by special agreement; and at half-price, or less, second-hand, according to their condition and age. These boats, however, are so fragile that they ought to be carefully examined by a competent person before buying them. The following may be considered the ordinary price of new, nearly new, and second-hand boats, complete :—

Scale of Prices.

	New.	Nearly New.	Second-hand.
	£	£	£ £
Eight-oared outrigger	60	45	25 to 30
Four-oared "	40	35	20 " 25
Pair-oared "	20	15	10 " 12
Sculling boat "	15	10	8 " 9
Six-oared gig	35	30	20 " 25
Four-oared gig	30	25	15 " 20
Pair-oared gig	25	20	10 " 15

CHAPTER IV.

CANOE RACING AND CANOE CRUISING.

Sect. 1.—General Remarks.

Prior to the year 1866 the sport of canoeing, in its best form, was scarcely recognised. Men in canoes were occasionally allowed to paddle races at the conclusion of a regatta, but spectators chiefly looked on in expectation of the fun of seeing the competitors upset. There were, however, it is true, a few amateurs who performed long aquatic journeys in canoes merely for the enjoyment of a very pleasant means of travelling athletically. These gentlemen were seldom met with, and their voyages were not usually recorded; they existed, nevertheless, and some of them still take, at the present time, a great interest in canoeing. The man who has done more real hard genuine canoeing work on the rivers, lakes, and seas of Europe than any other individual is Mr. Edward Atkinson, who, following the amusement for its own sake, has enjoyed canoe travelling to the fullest extent. This gentleman, besides his doings on the Continent, has paddled and sailed down the principal rivers of Great Britain and Ireland; coasted in canoes from London down the English Channel to Falmouth in Cornwall, and accomplished many feats of skill and endurance that contrast strongly with some canoeing performances of which much parade has been made.

In the year 1866 canoeing experienced a kind of revival, owing to the large sale of an interesting book written by Mr. John Macgregor, who narrated in its pages a series of wonderful exploits and some very pleasant experiences. This work directed public attention to canoes; and it cannot be doubted that the great demand for those vessels from 1866 to 1870 was mainly caused by the publication of the book in question. During the years above mentioned paddling was largely practised on the Thames and elsewhere, canoes became very numerous, and canoe-men paddled or sailed in their small vessels over navigable rivers, and down streams upon which boats had not before floated.

Canoeing was probably adopted as a pastime by hundreds of men because the trouble of learning to paddle was slight in comparison with that of acquiring proficiency in rowing. They could enter a canoe which was comparatively flat-bottomed and safe, and take a dig alternately to left and right so as to impart motion to their vessel; and for the rest they had faith in the adage that "practice makes perfect." There are now to be seen upon the Thames hundreds of canoes, whose occupants paddle about lazily from one reach to another; but only a very small percentage of the paddlers arrive at anything approaching that perfection which should follow their almost daily practice. It is doubted whether such paddling as is usually seen can claim recognition as an athletic exercise; and even when by long and assiduous practice a man attains perfection in the art of propelling a canoe by means of a double-bladed paddle, the motions are so ungraceful and the pace attained so slow (when compared with sculling), that canoeing, if dependent upon racing for its reputation, would sink out of recognition as a sport; for as canoe paddling is inferior to boat sculling, so is canoe sailing far below boat sailing.

But there is another branch of this pastime which challenged attention, and placed canoeing upon a new footing as a distinct sport. That branch is "cruising," or "canoe travelling." It lifted canoeing from obscurity, and the cruisers made the fame of the sport. They proved that the canoe would go where boats could not be rowed, and that a canoe which could be carried over an up-river obstruction was sufficiently safe to venture in open water with larger boats. There was also the great advantage of position, as the traveller saw clearly and without difficulty everything he approached. For a long athletic journey down rivers or lakes a good canoe is unequalled. As a vessel for travelling in, it is more handy than a boat, and less wet in bad weather; but as a craft in which to take muscular exercise, or sail, it is greatly inferior to the gig or skiff.

Sect. 2.—Dimensions of Canoes.

Various attempts have been made on the Thames during the past four years to improve canoes. In one direction they have been robbed of stability in order to give them greater speed under the paddle, until we find them so unsafe that the swell of a steam-launch will put an excellent paddler in danger of an upset. In another way, for sailing purposes, the stability and weight have been increased to the destruction alike of pace and handiness, and the craft which have resulted from the experiments are of no practical use for the general purposes of canoeing.

The canoes in which men have performed the greatest journeys have been not less than 14 ft. nor more than 18 ft. long; nor more that 2 ft. 6 in. nor less than 2 ft. 2 in. broad; nor has their depth exceeded 15 inches. Their weights have ranged from 40 lbs. to 80 lbs. Vessels of these classes have carried their owners down all the principal European rivers, including the Danube, Rhine, Thames, and Shannon; over the chief English, Irish, Scotch, and continental lakes, as well as across the English, Irish, and Bristol Channels, and over some hundreds of miles of sea along the coasts of England, Scotland, Ireland, Wales, and France. It is rather a remarkable fact that no noteworthy performance of any canoe outside those dimensions has been recorded.

Sect. 3.—Hints on Paddling and Sailing.

There is no more simple method of propelling a boat than by means of the paddle, which not only imparts motion to the vessel, but at the same time directs its course. So simple, indeed, is the process of paddling, that men almost invariably make fair progress through the water on the first time of entering a canoe. The novice should, however, adopt with all possible speed certain suggestions. He must take care that his seat is not too low, or he will fail to get his elbows clear of the deck; nor too high, as in that case he would probably cause the canoe to roll. The stretcher should be so placed as to allow of a slight fall of either knee as the corresponding arm pulls a blade of the paddle through the water.

A paddle should not be shorter than 7 ft. 6 in., nor longer than 8 ft. 6 in.; and in taking a stroke the paddler must keep the paddle as near to the side of the canoe as possible without bearing over towards the blade in the effort. When intended to propel an ordinary cruising canoe the stroke should be taken evenly,—not too quickly,—and the blade ought to be well pulled through the water until the elbow of the paddler is well behind his shoulder.

All cruising canoes of the dimensions named are fitted with a mast and sail, usually a small lug, under which they run and reach rapidly, although they will not go to windward except on a very strong tide running in that direction. Great care is necessary when a canoe is under canvas in open rough water; and the sheet should never be made fast.

Gybing is also attended with some danger, particularly if the boom extend farther aft than the middle of the well, as, should it, in coming over, strike the canoeist, an upset will probably result. Not a few canoe-men of experience affirm that no man should attempt to sail a canoe unless he has previously learned how to handle a sailing-boat—an opinion in which the writer concurs.

Very much has been written about the behaviour of canoes in rough water, and there can be no reasonable doubt that they are capable of living through a great deal of lumpy lake or river; but it will be well for canoeists to remember that a cruising canoe can be paddled through much rougher water than she will sail through.

The sailing of the short, broad, deep, and heavily-ballasted vessels or craft, provided with one or more centre-boards, does not differ in the slightest degree from ordinary boat-sailing. Any hints or directions respecting it would therefore be superfluous.

PART III.

RURAL GAMES AND OUT-DOOR AMUSEMENTS.

BOOK I.—GAMES PLAYED WITH BALL.

CHAPTER I.

CRICKET.

Sect. 1.—General Remarks.

Cricket is, in rural amusements, what billiards are to the denizen of the city. At once a game of bodily skill and mental calculation, it requires for its successful cultivation the union of great physical activity and courage, with considerable powers of mind, and great self-control, especially in some of the more difficult departments—such as bowling, wicket-keeping, &c. Until within the last 100 years this game was very rarely played, yet there is evidence as to its existence as a game in the thirteenth century. But it is chiefly in the present century that cricket has become popular with all classes, and that it has taken the position which it now enjoys, as the leading national game played out of doors. There are several peculiarities in which cricket stands unrivalled at present, and which I trust may long be preserved to it. These are, first, its uniting all classes, for the peer and the peasant are constantly seen in the same eleven, and in a county match the best men will be selected, let their position in society be what it may; secondly, the general absence of gambling, for though betting cannot be entirely prevented, it is less associated with cricket than with any other game of the same degree of popularity; thirdly, its healthful tendency; and fourthly, the absence of intemperance as an adjunct. It is now the favourite game of the country village and the county town, as well as of the larger commercial cities, and of the great metropolis itself, where the M.C.C. at Lord's and the Surrey Club at the Kennington Oval, as well as some others of great repute, keep cricket going throughout the season. This lasts from spring to autumn, but is dependent a good deal upon the weather, for it requires a dry sod, as well as freedom from any present fall of rain, to play the game satisfactorily.

Sect. 2.—Cricketing Materials.

The Essentials for this fascinating game are—first, the ball; secondly, the bats; thirdly, the wickets, consisting of three stumps and two bails, at each end—these are all defined by the rules

given in the next section; and fourthly, the ground, which should be a field of as short and level turf as can be procured, and made still more level by the use of the roller.

THE ACCESSORIES generally required, though not absolutely essential, are—first, a line 22 yards long, with a frame of wood 6 feet 8 inches by 4 feet, for measuring the ground, and fixing the popping and bowling creases; secondly, a tent, in case of rain or very hot sun; thirdly, scoring-books; fourthly, gloves and leg-guards, to protect the hands and legs from the severe blows of the ball in fast bowling; and spiked shoes to prevent the feet from slipping when the grass is short.

THE GAME OF CRICKET IS PLAYED either as what is called "The Single-Wicket Game," or as "Double-Wicket."

SINGLE-WICKET requires one wicket, one popping crease, one bowling crease, one ball, one bat, and any number of players, arranged in two sides, not exceeding seven or eight of a side. With these the game is played subject to the special laws of single-wicket, which differ in some essential points from those of double-wicket.

DOUBLE-WICKET is played with one ball, two bats, two wickets, two popping creases, two bowling creases, and two sides of players—one of which shall consist generally of 11, but the other, though usually confined to the same number, may be extended to any other. TWO UMPIRES are also appointed to decide upon the proper carrying out of the rules.

SECT. 3.—THE LAWS OF CRICKET.

THE FOLLOWING LAWS are those which are now recognised throughout England and Scotland, having been carefully revised by the Marylebone Club, that being the highest authority in this game:—

LAWS OF DOUBLE-WICKET.

1.—THE BALL must weigh not less han five ounces and a half, nor more han five ounces and three-quarters. t must measure not less than 9 inches, or more than 9½ inches in circumerence. At the beginning of each nnings either party may call for a new all.

2.—THE BAT must not exceed 4½ ches in the widest part; it must not more than 38 inches in length.

3.—THE STUMPS must be three in number; 27 inches out of the ground; the bails 8 inches in length; the stumps of equal and of sufficient thickness to prevent the ball from passing through.

4.—THE BOWLING CREASE must be in a line with the stumps; 6 feet 8 inches in length; the stumps in the centre; with a return crease at each end towards the bowler at right angles.

5.—The POPPING CREASE must be 4 feet from the wicket and parallel to it, unlimited in length, but not shorter than the bowling crease.

6.—THE WICKETS must be pitched opposite to each other by the umpires, at the distance of 22 yards.

7.—It shall not be lawful for either party during a match, without the consent of the other, to alter the ground by rolling, watering, covering, mowing, or beating, except at the commencement of each innings, when the ground shall be swept and rolled, unless the side next going in object to it. This rule is not meant to prevent the striker from beating the ground with his bat near to the spot where he stands during the innings, nor to prevent the bowler from filling up holes with sawdust, &c., when the ground shall be wet.

8.—After rain the wickets may be changed, with the consent of both parties.

9.—THE BOWLER shall deliver the ball with one foot on the ground behind the bowling crease, and within the return crease, and shall bowl one over before he changes wickets, which he shall be permitted to do twice in the same innings; and no bowler shall bowl more than two overs in succession.

10.—The ball must be bowled; if thrown or jerked, or if the bowler in the actual delivery of the ball, or in the action immediately preceding the delivery, shall raise his hand or arm above his shoulder, the umpire shall call "no ball."

11.—He may require the striker at the wicket from which he is bowling to stand on that side of it which he may direct.

12.—If the bowler shall toss the ball over the striker's head, or bowl it so wide that in the opinion of the umpire it shall not be fairly within the reach of the batsman, he shall adjudge one run to the party receiving the

innings, either with or without an appeal, which shall be put down to the score of wide balls; such ball shall not be reckoned as one of the four balls; but if the batsman shall by any means bring himself within reach of the ball, the run shall not be adjudged.

13.—If the bowler deliver a "no ball" or a "wide ball," the striker shall be allowed as many runs as he can get, and he shall not be put out except by running out. In the event of no run being obtained by any other means, then one run shall be added to the score of "no balls" or "wide balls," as the case may be. All runs obtained for "wide balls" to be scored to "wide balls." The names of the bowlers who bowl "wide balls" or "no balls" in future to be placed on the score to show the parties by whom either score is made. If the ball shall first touch any part of the striker's dress or person (except his hands), the umpire shall call "leg bye."

14.—At the beginning of each innings the umpire shall call "play;" from that time to the end of each innings no trial ball shall be allowed to any bowler.

15.—THE STRIKER IS OUT if either of the bails be bowled off, or if a stump be bowled out of the ground;

16.—Or, if the ball from the stroke of the bat, or hand, but not the wrist, be held before it touch the ground, although it be hugged to the body of the catcher;

17.—Or, if in striking, or at any other time while the ball shall be in play, both his feet shall be over the popping crease, and his wicket put down, except his bat be grounded within it;

18.—Or, if in striking at the ball he hit down his wicket;

19.—Or, if under pretence of running, or otherwise, either of the strikers prevent a ball from being caught, the striker of the ball is out;

20.—Or, if the ball be struck, and he wilfully strike it again;

21.—Or, if in running, the wicket be struck down by a throw, or by the hand or arm (with ball in hand), before his bat (in hand) or some part of his person be grounded over the popping crease. But if both the bails be off, a stump must be struck out of the ground;

22.—Or, if any part of the striker's dress knock down the wicket;

23.—Or, if the striker touch or take up the ball while in play, unless at the request of the opposite party;

24.—Or, if with any part of his person he stop the ball, which in the opinion of the umpire at the bowler's wicket shall have been pitched in a straight line from it to the striker's wicket, and would have hit it.

25.—If the players have crossed each other, he that runs for the wicket which is put down is out.

26.—A ball being caught, no runs shall be reckoned.

27.—A striker being run out, that run which he and his partner were attempting shall not be reckoned.

28.—If a lost ball be called, the striker shall be allowed six runs; but if more than six shall have been run before "lost ball" shall have been called, then the striker shall have all which have been run.

29.—After the ball shall have been finally settled in the wicket keeper's or bowler's hand, it shall be considered dead; but when the bowler is about to deliver the ball, if the striker at his wicket go outside the popping crease before such actual delivery, the said bowler may put him out, unless (with reference to the 21st law) his bat in hand, or some part of his person, be within the popping crease.

30.—The striker shall not retire from his wicket and return to it to complete his innings after another has been in, without the consent of the opposite party.

31.—NO SUBSTITUTE shall in any case be allowed to stand out, or run between wickets for another person without the consent of the opposite party; and in case any person shall be allowed to run for another, the striker shall be out if either he or his substitute be off the ground in manner mentioned in laws 17 and 21, while the ball is in play.

32.—In all cases where a substitute shall be allowed, the consent of the opposite party shall also be obtained as to the person to act as substitute, and the place in the field which he shall take.

33.—If ANY FIELDSMAN stop the ball with his hat, the ball shall be considered dead, and the opposite party shall add five runs to their score; if any be run they shall have five in all.

34.—The ball having been hit, the striker may guard his wicket with his bat or with any part of his body except his hands; that the 23rd law may not be disobeyed.

35.—THE WICKET-KEEPER shall not take the ball for the purpose of stumping until it has passed the wicket; he shall not move until the ball be out of the bowler's hand; he shall not by any noise incommode the striker; and if any part of his person be over or before the wicket, although the ball hit it, the striker shall not be out.

36.—THE UMPIRES are the sole judges of fair or unfair play; and all disputes shall be determined by them, each at his own wicket; but in case of a catch which the umpire at the wicket bowled from cannot see sufficiently to decide upon, he may apply to the other umpire, whose opinion shall be conclusive.

37.—The umpires in all matches shall pitch fair wickets; and the parties shall toss-up for choice of innings. The umpires shall change wickets after each party has had one innings.

38.—They shall allow two minutes for each striker to come in, and ten minutes between each innings. When the umpire shall call "play," the party refusing to play shall lose the match.

39.—They are not to order a striker out unless appealed to by the adversaries.

40.—But if one of the bowler's feet be not on the ground behind the bowling crease and within the return crease when he shall deliver the ball, the umpire at his wicket, unasked, must call "no ball."

41.—If either of the strikers run a short run, the umpire must call "one short."

42.—No umpire shall be allowed to bet.

43.—No umpire is to be changed during a match, unless with the consent of both parties, except in case of violation of the 42nd law; then either party may dismiss the transgressor.

44.—After the delivery of four balls the umpire must call "over," but not until the ball shall be finally settled in the wicket-keeper's or bowler's hand; the ball shall then be considered dead; nevertheless, if an idea be entertained that either of the strikers is out, a question may be put previously to, but not after, the delivery of the next ball.

45.—The umpire must take especial care to call "no ball" instantly upon delivery; "wide ball" as soon as it shall pass the striker.

46.—The PLAYERS who go in second shall follow their innings, if they have obtained eighty runs less than their antagonists, except in all matches limited to only one day's play, when the number shall be limited to sixty instead of eighty.

47.—When one of the strikers shall have been put out, the use of the bat shall not be allowed to any person until the next striker shall come in.

NOTE.—The Committee of the Marylebone Club think it desirable that, previously to the commencement of a match, one of each side should be declared the manager of it; and that the new laws with respect to substitutes may be carried out in a spirit of fairness and mutual concession, it is their wish that such substitutes be allowed in all reasonable cases, and that the umpire should inquire if it is done with the consent of the manager of the opposite side.

Complaints having been made that it is the practice of some players when at the wicket to make holes in the ground for a footing, the Committee are of opinion that the umpires should be empowered to prevent it.

LAWS OF SINGLE-WICKET.

1.—Where there shall be less than five players on a side, bounds shall be placed 22 yards each in a line from the off and leg stump.

2.—The ball must be hit before the bounds to entitle the striker to a run, which cannot be obtained unless he touch the bowling stump or crease in a line with his bat, or some part of his person, or go beyond them, returning to the popping crease as at double-wicket, according to the 21st law.

3.—When the striker shall hit the ball, one of his feet must be on the ground, and behind the popping crease, otherwise the umpire shall call "no hit."

4.—When there shall be less than five players on a side, neither byes nor over-throws shall be allowed, nor shall the striker be caught out behind the wicket, nor stumped out.

5.—The fieldsman must return the ball so that it shall cross the play between the wicket and the bowling stump, or between the bowling stump

and the bounds; the striker may run till the ball be so returned.

6.—After the striker shall have made one run, if he start again he must touch the bowling stump, and turn before the ball cross the play to entitle him to another.

7.—The striker shall be entitled to three runs for lost ball, and the same number for ball stopped with hat, with reference to the 28th and 33rd laws of double-wicket.

8.—When there shall be more than four players on a side there shall be no bounds. All hits, byes, and overthrows shall then be allowed.

9.—The bowler is subject to the same laws as at double-wicket.

10.—Not more than one minute shall be allowed between each ball.

Bets.

1.—No bet upon any match is payable unless it be played out or given up.

2.—If the runs of one player be betted against those of another, the bet depends on the first innings, unless otherwise specified.

3.—If the bet be made on both innings, and one party beat the other in one innings, the runs of the first innings shall determine it.

4.—If the other party go in a second time, then the bet must be determined by the number on the score.

Sect. 4.—The Game.

In Single-Wicket the stumps are driven into the ground subject to the 3rd and 5th laws of double-wicket; and in front of them a popping crease is marked off, in accordance with law 5. At 22 yards from the wicket a bowling stump is usually fixed, but a bowling crease, as defined by the 4th law, *must* be marked at the proper distance, and here the bowler must deliver his balls, as defined by laws 9, 10, 12, 13, and 14. The game is defended by the batsman, or striker, who stands at the popping crease; and he is bound by the laws of single-wicket, when they are in opposition to the usual rules, both of which may be referred to. The attack is conducted by the other side, placed in the field according to their numbers. Bounds are marked off when there are less than five players of a side, according to law 1; and in that case no wicket-keeper is required, and all the fielders may be in front of this line.

Double-Wicket may be considered, for all practical purposes, to consist of two sides of eleven players each. One of these, according to the result of the "toss for sides," has the first innings, and two of their party defend the wickets with a bat each, the others being at liberty till their turns come respectively. By the other side, who are now "fielding," the attack is maintained; their object being to "take the wickets" of the strikers, by bowling at either of them four balls consecutively from the bowling crease of the opposite wicket. If the bail of the wicket is knocked off by the ball, or a stump is bowled out of the ground, or if any of the events occur which are defined by law 15, and following ones up to 34, the striker is "out," and is replaced by another of his party, until the whole side are put out *seriatim*. If, on the other hand, the ball is struck by the batsman, or if certain other contingencies happen (for which see rules), the striker may run to the opposite popping crease and score one; then back again, scoring another; and away a second time, or even more, if possible; for each of which "runs" a score of one is to be made. The side which makes the greatest score is the winner.

The Management of the Sides is as follows:—In club-games two managers or captains are fixed upon, one for each side; these choose their ten assistants, one after the other, from the members present, and allot to each their respective positions when fielding. In matches, the match is first made between two clubs, and then the eleven players are selected from each club by a committee, or by general consent, or by first appointing a manager, who then picks out his men, and afterwards takes their entire control in the field.

The game is divided into three departments—Batting, Bowling, and Fielding.

Batting is certainly, to the majority of players—especially young players—the most fascinating branch. Its effect is more directly apparent and it connects itself more with the individual than does either bowling or fielding. Care should be taken not to over-estimate batting, however, as to be a proficient in the game a man should be able both to bowl and field well. The latter is an art so much neglected by some that

except for batting purposes, their services in an eleven would be utterly worthless. On the other hand, it is not well to decry batting, as is sometimes the case with writers who go into the opposite extreme, and depreciate what after all is a most vital element of the game. To begin then with this, the fundamental principle in cricket. The first thing for a batsman to do, is to exercise great care in the choice of a weapon. Neither too heavy nor too light; but the golden mean as in so many other things, is the best maxim. Indeed it is better to err on the side of lightness than of heaviness. The tendency of many players is to choose a bat much too heavy for their strength, with the idea that it gives them more power over the ball. Such is radically wrong. They forget that the little gained in extra weight is lost in want of freedom —in addition to which the fatigue to the player himself is much greater. We would therefore give the Hibernian advice, err not at all, but if you do err let it be on the side of lightness. Having made a careful choice, the next thing which commands attention is "Position." A correct attitude once acquired never leaves a player, while an awkward position once indulged in, is extremely difficult to eradicate. Be natural, stand with the right foot just inside the popping crease, with the toes so that a straight line drawn from the leg-stump would clear them. The right leg should be kept firm, and form as it were the axle on which the whole of the body should act, although this, of course, must not be overstrained, the left foot should be placed easily, the toes almost pointing towards the opposite wicket. Felix, in his treatise on the Bat, gives out as the best attitude "to stand with your knees slightly bent, just enough to enable you to spring immediately into whatever attitude you may be required to." Now it is obvious, that this double position is a loss of time, and with difficult bowling time is everything. First, there is the standing in a crouched posture, which in itself is held to be bad, and then there is the getting into the necessary attitude to strike the ball. Whereas, with the position which we have above recommended the body is posed in the readiest manner for immediate action. It has, moreover, the double sanction of the Rev. J. Pycroft and Mr. W. G. Grace—the former the best theorist cricket has ever produced, and the latter the best player. Having paid close attention to pose, and gone in for what Lillywhite recommends as attitude practice, the next thing for the batsman to do is to deal with the various balls aimed at his wicket. The first and all-important rule to bear in mind is, never take your eyes off the ball until it is played. This, to some people, may seem most unnecessary advice, but it is too often neglected by batsmen, who go in for thinking how the ball might come, instead of closely watching where it comes. Directly the ball has pitched, at once decide what you will do with it, and whichever way you determine, act without hesitation. Never waver and do something else, as the little time that elapses between the pitch of the ball and its arrival at the wicket (supposing of course that it is not stopped), short as it is, is thus divided in half. Promptness should therefore be the batsman's watchword. The most difficult balls to play are what are called length-balls, that is, balls that are thrown to within four or five yards of the wicket before they pitch. There are two ways to deal with balls, either offensive or defensive. The latter is the best tactic for a player to adopt for the first few overs, until his eye gets set and he has had an opportunity of judging his opponent's pace, and the power that opponent has of varying his pace. Immediately a length-ball reaches the ground, that moment a player must decide whether he will simply resist its attack, or whether he will take the attack on himself. The bat should be held in a slanting position, with the handle towards the bowler and the point as nearly as possible in a line with the middle stump, so that if the ball is played straight forward, the batsman will thus utilize the whole width of the bat with which to defend his wicket. The same remark applies to back play, by holding the bat in this position you can more readily pounce down on a shooter or elevate it to stop a bailer.

The chief hits practised by batsmen may be briefly described as follows:—

The Block.—We have classed this among the hits because it should be executed in a much more vigorous manner than is generally done. Many

players are content with waiting until the ball reaches the bat, and then merely warding it off. As much vigour proportionately should be put into the block as into any other hit.

THE CUT.—This is one of the most enjoyable hits to both the batsman and spectators, made from balls which come wide on the off-side. If the ball be pitched well up the striker should advance his right foot, and with his bat horizontally inclined, cut it between point and slip. (See fig. 4.) Should the ball be short-pitched, he will do well to keep his right foot steady and advance the left, sending it between point and cover-point. (See fig. 2.)

LEG-HIT.—The hit to long-leg is of much greater rarity now than formerly. When old George Parr delighted his audience with his wonderful leg hitting it was necessary to have a good man at square-leg, *i.e.* in a line with the leg-side of the wicket, and another at long leg. Very often now the latter fieldsman is done away with; in fact, in nearly all cases of slow bowling. The ball should be met as near the pitch as

BATTING POSITIONS.

possible, in case there should be much break upon it, care being observed to keep the right foot well within the crease, while the left should be advanced as much as possible. The batsman is thus enabled to strike the ball round to an angle of 60 degrees behind the wicket.

Square-leg.—This hit should be made by a swinging action of the bat, and not, as is too frequently the case, with a mere push. The left shoulder should be brought forward and the ball met on the rise, and instead of slightly turning its progress, as in the leg-hit, send it in a straight line with the popping crease.

THE DRAW.—This is a very pretty hit; but is not so frequently practised now as with the past generation of cricketers. It is made by meeting a ball with an upright bat slightly turned, so as to allow the ball to glance between the right leg and the leg stump. The hit should not be sought after too much, as it is highly fascinating and fraught with considerable danger.

DRIVES.—These are of three kinds—the Straight, the On, and the Off. The way to make them is by driving the ball with a full straight bat back into the opposite direction from which it came. The hit is easily enough made if the batsman will stand with his bat in the "pendulum" position we have already mentioned.

BOWLING.—As we have already said balls may safely be divided into lengths and not-lengths. Before describing these, we may mention that the first attainment for a bowler is a

easy delivery, *i.e.* a delivery which shall neither over-tax his strength nor be jerky. The run before delivery should be as short as possible, consistent with the power to give due impetus to the ball, which should be held by the seams as more command is thus obtained over it. Some bowlers possess the faculty of being able to vary the style of delivery so as to altogether deceive the batsman as to the rate of speed at which the ball is going to travel. This, however, is a rare gift. Others again can vary the pace and keep at a uniform delivery. The latter is by far the most wily and insinuating mode of attack. Both styles can only be acquired with practice. One golden principle, however, we may impress on beginners: Deliver the ball as high as you can; or, in other words, make the greatest possible use of your height, as it is much more perplexing to the batsman than a low delivery. With regard to pace it is a great mistake to attempt too much at first. The bowler, instead of acquiring strength, which he would do if he began with slow balls and gradually increased his pace, is apt to deteriorate in this respect, to say nothing of the want of accuracy which characterises the deliveries of a man bowling beyond his power. A by no means bad way to practise pitch (that all-important element in good bowling), is to place a mark at a good pitching distance in a line with the wicket. Having acquired facility in bowling straight balls, the mark should be gradually removed, either to the Off or On, so as to practise getting break on the ball. In addition to length-balls, the "head bowler" (such, for example, as Alfred Shaw, or Mr. W. G. Grace,) has many ways of tempting the batsman out of his ground and to hit the ball up so as to fall an easy prey to catches.

FIELDING.—Much too little has been thought of this branch of the game, though we are glad to say that within the last two years it has received much more attention at the hands of both amateurs and professionals. The former used to be sadly deficient in this respect, but we now have among the gentlemen players some of the best fieldsmen in England. To be proficient in the field requires much more skill with hand and eye than is generally supposed. To stop the ball, to pick it up quickly, to return it promptly to the wicket, to be a good catch, and in many cases a fast runner, are a few of the essentials required of a "field." The positions are varied to suit both the bowlers and the batsmen. With little modification to suit slow and fast bowling they are as follows (for the positions mentioned we must refer the reader to the diagrams given on pages 673 and 674).

POINT.—There is great variation in the distances at which this fieldsman stands from the wicket. Some come as close in as seven yards, while others will not venture within twice that distance. There is no law on the subject, the difference depending, firstly, on the ability of the fieldsman, and secondly on the nature of the bowling. Point should be particularly vigilant, and if he be expert he can almost tell from the pitch of the ball whether it is likely to be cut to him or not. There are many short catches given to him, and this being so, he should be one of the smartest men in the field.

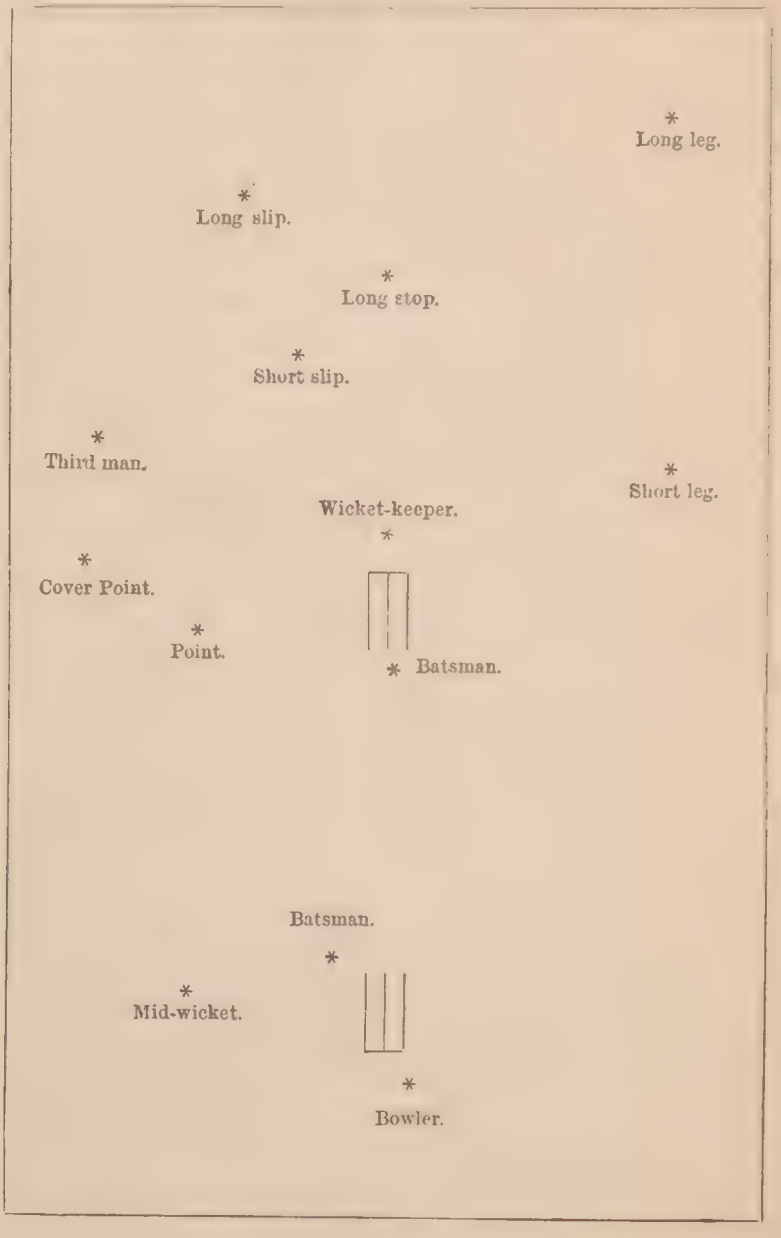
COVER POINT should be able to get over the ground quickly. His chief duty is to back point up, so as to stop any balls missed by him. As many sharp runs are attempted when the ball is sent towards him, he ought to be able to pick it up cleanly and return it promptly to the wicket. He has many chances of catching the ball when, in attempting to cut, the batsman plays a little too full.

WICKET-KEEPER.—This is the most arduous post in the field. The wicket-keeper stands as near the stumps as his own ability and the fastness of the bowling will allow. He should watch the ball directly it leaves the bowler's hand as narrowly as does the batsman, and, as he has longer time to see it after the pitch, should be able to take it whether on the leg or off side. Should the unlucky batsman, in playing too far forward or swinging round at leg, miss his mark and get his foot outside the popping crease, he should be ready to take the ball and whisk the bails off. Balls that rise rather high after the pitch should also be the object of his special attention, as in playing up to them the batsman is apt to give a chance for a catch. Directly the ball is struck he must face the fieldsman and be ready to receive it, and if necessary put the

wicket down, so as to have the batsman run out should he not be within the crease.

Long Stop.—Except with very fast bowling, and an indifferent wicket-keeper, the position of long stop is often dispensed with. As his name implies, he should be able to stop the ball well with either hand and also to move quickly from one side to the other. He should be watchful where the ball pitches, and be ready to field it should

Field for Fast Bowling to a Right-handed Batsman.



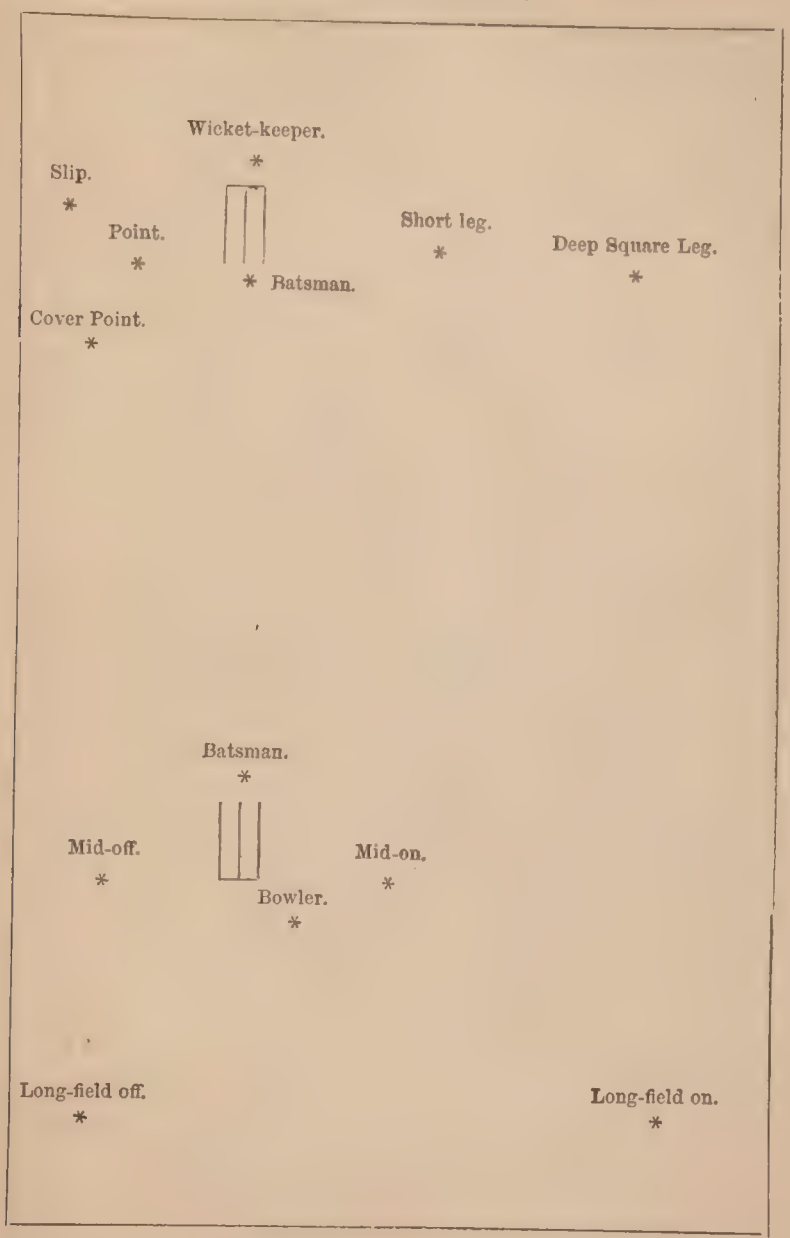
it escape both batsman and wicket-keeper. Except in rare cases, the ball should be returned by him to the wicket-keeper, and not to the bowler. Although it is reckoned a thankless office, long-stopping requires great patience, and is a position which under some circumstances is exceedingly useful to the side.

Short Slip.—This position is usually assigned to the bowler of the previous over, as, although a sure catch is

required, there is not much fatigue attending it. He is thus given an opportunity for resting. One of his chief duties is to quickly back up the wicket-keeper, and should the latter leave his charge to field a ball, he should at once take his place at the wicket.

LONG LEG.—A quick runner, a good judge of a catch, and a strong thrower should be chosen to fill this very

FIELD FOR SLOW BOWLING.



important post. He will often have to cover a great deal of ground both to effect a catch or stop the ball; and as he is usually placed between 60 and 70 yards from the wicket he should be able to return the ball accurately.

MID-WICKET, "ON" AND "OFF."—Hard hit balls usually fall to the lot of the fieldsman occupying either of these places; consequently no small amount of courage is necessary to fill the post efficiently. The catches are generally of a difficult character, and leave no

time for hesitation, therefore a dauntless man should be chosen.

Long Field, "Off" or "On."—Although these positions in the field do not find favour with the majority of players, there is frequent opportunity of not only making brilliant catches, but of saving a considerable number of runs. A good long-field will not wait quietly for the ball to reach him, but where practicable will advance to meet it.

The Duties of the Umpires are very onerous, and their eyes must be constantly occupied in detecting unfair play. Every ball requires watching in its delivery, and the umpire must call "No ball" at once, if it is improperly given.

In counting "overs," four coins are generally used, passing a coin from one hand to the other as each ball is delivered until they are expended.

Sect 5.—Dress.

The Dress of the cricketer is almost universally a flannel shirt, with trousers of the same, and a loose jacket of similar material, either white or of the club colours, to be worn when not in active exercise or during chilly weather. A light cap is generally adopted, though some players still adhere to the straw hat, or even to the ordinary hat, on the ground that it protects the head better than a lighter covering. Leg-guards and body-guards are used in batting and wicket-keeping; and also gloves, which some use in all places in the field. Oxford shoes, or regular cricket shoes, with spiked soles, complete the arrangements.

Sect. 6.—The Expenses.

Cricket may be played at very little expense, the price of balls, bats, and stumps being all that is really required; or it may be made a rather extravagant game, depending upon the outlay in non-essentials incident to matches, &c. The ground is the chief needful outlay, and sometimes that can be obtained all the year round for nothing, as in the neighbourhood of common land. But here it cannot be preserved in tip-top order, and many irregularities will always exist. At Lord's and similar grounds the charge is generally from 1*l.* 1*s.* to 10*s.* 6*d.* per afternoon, according to the accommodation offered; and this, divided among 22 men, is not a very severe outlay. When, however, dinners are constantly being made up, and the expenses of going from home to matches are considered, it will be found that cricket, innocent as it is, may be made a source of considerable expense to a young man of limited income. To such, therefore, I would say, look well before you incur anything more than the club subscription, and you will thus often thereby avoid the payment of a bill five or six times as great as you had previously expected. Tents cost from 12*l.* up to 30*l.*, according to dimensions.

CHAPTER II.

FOOTBALL.

Sect. 1.—General Remarks.

Football has of late years grown into such general popularity that it may be termed the national winter game. Unquestionably one of the most ancient of our English pastimes, it fell into disrepute owing to the rough character of the sport during the sixteenth and seventeenth centuries, and until about fifteen years ago was strictly confined to Rugby and our chief public schools. At the present day it has extended from its original source in the metropolis to every part of the country, and may be said to occupy the same position in winter as cricket in summer. Its many merits recommend it strongly to public favour. To be a good football player requires a rare combination of skill and activity, no less than the possession of courage and self-control, and at the same time inculcates the benefits of good discipline in an explicit manner. The season usually lasts from October until March, and with the exceptions of snow and frost (which render it dangerous), changes of the weather have little effect on the pursuit of the game.

The methods of playing football were until a few years ago varied and numerous, but since the formation of the two bodies called the Football Association and Rugby Union, for the purpose of simplifying and amalgamating the different codes in force, the game has finally settled into two distinct styles, commonly known as Rugby Union rules and Football Association rules.

Sect. 2.—The Football Association.

The following laws, which bear the impress of the Football Association, are not only very extensively employed in London, but almost universally in the Northern Counties. The object of this code is to encourage "dribbling," or working the ball with the feet to the exclusion of all usage of the hands; and simplicity has also been carefully studied by the abolition of all clauses and technicalities calculated to prevent the easy comprehension of the rules.

Association Rules.

1. The maximum length of the ground shall be 200 yards, minimum length 100 yards; maximum breadth 100 yards, minimum breadth 50 yards. The length and breadth shall be marked off with flags; and the goals shall be upright posts, eight yards apart, with a tape or bar across them eight feet from the ground.

2. The winners of the toss shall have the option of kick-off or choice of goals. The game shall be commenced by a place-kick from the centre of the ground; the other side shall not approach within ten yards of the ball until it is kicked off, nor shall any player on either side pass the centre of the ground in the direction of his opponents' goal, until the ball is kicked off.

3. Ends shall only be changed at half-time. After a goal is won the losing side shall kick off, but after the change of ends at half-time the ball shall be kicked off by the opposite side from that which originally did so; and always as provided in Rule 2.

4. A goal shall be won when the ball passes between the goal-posts under the tape or bar, not being thrown, knocked on, nor carried. The ball hitting the goal or boundary posts, or goal-bar or tape, and rebounding into play, is considered in play.

5. When the ball is in touch a player of the opposite side to that which kicked it out shall throw it from the point on the boundary line where it left the ground in any direction the thrower may choose. The ball must be thrown at least six yards, and shall be in play when thrown in; but the player throwing it in shall not play it until it has been played by another player.

6. When a player kicks the ball, any one of the same side who, at such moment of kicking, is nearer to the opponents' goal-line, is out of play, and may not touch the ball himself, nor in any way whatever prevent any other player from doing so until the ball has been played, unless there are at least three of his opponents nearer their own

goal-line; but no player is out of play when the ball is kicked from the goal-line.

7. When the ball is kicked behind the goal-line by one of the opposite side, it shall be kicked off by any one of the players behind whose goal-line it went, within six yards of the nearest goal-post; but if kicked behind by any one of the side whose goal-line it is, a player of the opposite side shall kick it from within one yard of the nearest corner flag-post. In either case, no other player shall be allowed within six yards of the ball until it is kicked off.

8. No player shall carry or knock on the ball, and handling the ball under any pretence whatever shall be prohibited, except in the case of the goal-keeper, who shall be allowed to use his hands in defence of his goal, either by knocking on or throwing, but shall not carry the ball. The goal-keeper may be changed during the game, but not more than one player shall act as goal-keeper at the same time, and no second player shall step in and act during any period in which the regular goal-keeper may have vacated his position.

9. Neither tripping nor hacking shall be allowed, and no player shall use his hands to hold or push his adversary, nor charge him from behind.

10. No player shall wear any nails (excepting such as have their heads driven in flush with the leather), iron plates, or gutta-percha, on the soles or heels of his boots.

11. In the event of any infringement of Rules 6, 8, or 9, a free kick shall be forfeited to the opposite side from the spot where the infringement took place.

12. In no case shall a goal be scored from any free kick, nor shall the ball be again played by the kicker until it has been played by another player. The kick-off and corner-flag kick shall be free kicks within the meaning of this rule.

13. That in the event of any supposed infringement of Rules 6, 8, 9, or 10, the ball be in play until the decision of the umpire, on his being appealed to, shall have been given.

DEFINITION OF TERMS.

A Place Kick is a kick at the ball while it is on the ground, in any position in which the kicker may choose to place it.

Hacking is kicking an adversary intentionally.

Tripping is throwing an adversary by the use of the legs.

Knocking on is when a player strikes or propels the ball with his hands or arms.

Holding includes the obstruction of a player by the hand or any part of the arm below the elbow.

Touch is that part of the field, on either side of the ground, which is beyond the line of flags.

A Free Kick is a kick at the ball in any way the kicker pleases, when it is lying on the ground; none of the kicker's opponents being allowed within six yards of the ball; but in no case can a player be forced to stand behind his goal-line.

Handling is understood to be playing the ball with the hand or arm.

Sect. 3.—The Rugby Union.

The following laws, which have been framed after the model of those originally used at Rugby School, have been largely adopted by minor schools and clubs in the neighbourhood of London. They are more extensive and elaborate than those of the Football Association, and so replete with technicalities and intricate manœuvres as to render them utterly incomprehensible, except at the expense of a lengthy apprenticeship. The main idea is to encourage speed of foot, and kicking is reduced almost to a minimum compared with the other code, while the objectionable frequency of the mauls, which disfigure the game, invests Rugby Union rules with an atmosphere of danger unknown in the practice of the laws sanctioned by the Football Association; nevertheless, the "maulers" are more numerous than the "dribblers," boisterous fun having for many youngsters a greater attraction than skilful kicking of the ball.

RUGBY UNION RULES.

1. *A Drop Kick* or *Drop* is made by letting the ball fall from the hands and kicking it the very instant it rises.

2. *A Place Kick* or *Place* is made by kicking the ball after it has been placed in a nick made in the ground for the purpose of keeping it at rest.

3. *A Punt* is made by letting the ball fall from the hands and kicking it before it touches the ground.

4. *Each Goal* shall be composed of two upright posts, exceeding 11 feet in height from the ground, and placed 18

feet 6 inches apart, with a cross-bar 10 feet from the ground.

5. *A Goal* can only be obtained by kicking the ball from the field of play direct (*i.e.* without touching the ground or the dress or person of any player of either side) over the cross-bar of the opponents' goal, whether it touch such cross-bar, or the posts, or not; but if the ball goes directly over either of the goal-posts it is called a *poster*, and is not a goal. A goal may be obtained by any kind of kick except a *punt*.

6. A try is gained when a player touches the ball down in his opponents' goal.

7. A match shall be decided by a majority of goals; but if the number of goals be equal, or if no goal be kicked, by a majority of tries. If no goal be kicked or try obtained, the match shall be drawn. When a goal is kicked from a try, a goal only is scored.

8. The ball is *dead* when it rests absolutely motionless on the ground.

9. *A Touch Down* is when a player, putting his hand upon the ball on the ground in touch or in goal, stops it so that it remains dead or fairly so.

10. *A Tackle* is when the holder of the ball is held by one or more players of the opposite side.

11. *A Scrummage* takes place when the holder of the ball, being in the field of play, puts it down on the ground in front of him, and all who have closed round on their respective sides endeavour to push their opponents back, and, by kicking the ball, to drive it in the direction of the opposite goal-line.

12. A player may *take up* the ball whenever it is rolling or bounding, except in a scrummage.

13. It is not lawful to take up the ball when dead (except in order to bring it out after it has been touched down in touch or in goal) for any purpose whatever; whenever the ball shall have been so unlawfully taken up it shall at once be brought back to where it was so taken up and there put down.

14. In a scrummage it is not lawful to touch the ball with the hand under any circumstances whatever.

15. It is lawful for any player who has the ball to run with it, and if he does so, it is called a *run*. If a player runs with the ball until he gets behind his opponents' goal-line, and there touches it down, it is called a *run in*.

16. It is lawful to run in anywhere across the goal-line.

17. The goal-line is in goal, and the touch-line is in touch.

18. In the event of any player holding or running with the ball being tackled, and the ball fairly held, he must at once cry *down*, and there put it down.

19. *A Maul in Goal* is when the holder of the ball is tackled inside goal-line, or, being tackled immediately outside, is carried or pushed across it, and he or the opposite side, or both, endeavour to touch the ball down. In all cases the ball, when so touched down, shall belong to the players of the side who first had possession of it before the maul commenced, unless the opposite side have gained entire possession of it.

20. In case of a maul in goal, those players only who are touching the ball with their hands when it crosses the goal-line, may continue in the maul in goal, and when a player has once released his hold of the ball after it is inside the goal-line, he may not again join in the maul, and if he attempts to do so he may be dragged out by the opposite side.

But if a player when running in is tackled inside the goal-line, then only the player who first tackled him, or if two or more tackle him simultaneously, they only may join in the maul.

21. *Touch in Goal* (see Plan). Immediately the ball, whether in the hands of a player (except for the purpose of a punt out—see Rule 29) or not, goes into touch in goal, it is at once dead and out of the game, and must be brought out as provided by Rules 41 and 42.

22. Every player is *on side*, but is put *off side* if he enters a scrummage from his opponents' side, or, being in a scrummage, gets in front of the ball, or when the ball has been kicked, touched, or is being run with by any of his own side behind him (*i. e.* between himself and his goal-line). No player can be off side in his own goal.

23. Every player when off side is out of the game, and shall not touch the ball in any case whatever, either in or out of touch or goal, or in any way interrupt or obstruct any player, until he is again on side.

24. A player being off side is put on side when the ball has been run five

yards with, or kicked by, or has touched the dress or person of any player of the opposite side, or when one of his own side has run in front of him either with the ball or having kicked it when behind him.

25. When a player has the ball, none of his opponents who at the time are off side may commence or attempt to run, tackle, or otherwise interrupt such player until he has run five yards.

26. *Throwing back.* It is lawful for any player who has the ball to throw it back towards his own goal, or to pass it back to any player of his own side who is at the time behind him, in accordance with the rules of on side.

27. *Knocking on, i. e.*, deliberately hitting the ball with the hand, and *Throwing forward,—i. e.*, throwing the ball in the direction of the opponents' goal-line, are not lawful. If the ball be either knocked on or thrown forward the captain of the opposite side may (unless a fair catch has been made as provided by the next rule) require to have it brought back to the spot where it was so knocked or thrown on, and there put down.

28. A *Fair Catch* is a catch made direct from a kick or throw forward, or a knock on by one of the opposite side, or from a punt out or a punt on (see Rules 29 and 30), provided the catcher makes a mark with his heel at the spot where he has made the catch, and no other of his own side touch the ball. (See Rules 43 and 44.)

29. A *Punt out* is a punt made after a touch down, by a player from behind his opponents' goal-line, and from touch in goal if necessary, towards his own side, who must stand outside the goal-line and endeavour to make a fair catch, or to get the ball and run in or drop a goal. (See Rules 49 and 51.)

30. A *Punt on* is a punt made in a manner similar to a punt out, and from touch if necessary, by a player who has made a fair catch from a punt out or another punt on.

31. *Touch.* (See Plan). If the ball goes into touch, the first player on his side who touches it down must bring it to the spot where it crossed the touch-line; or if a player when running with the ball cross or put any part of either foot across the touch-line, he must return with the ball to the spot where the line was so crossed; and thence return it into the field of play in one of the modes provided by the following rule.

32. He must then himself or by one of his own side, either, (i.) bound the ball in the field of play, and then run with it, kick it, or throw it back to his own side; or, (ii.) throw it out at right angles to the touch-line; or, (iii.) walk out with it at right angles to the touch-line, any distance not less than five nor more than fifteen yards, and there put it down, first declaring how far he intends to walk out.

33. If two or more players holding the ball are pushed into touch, the ball shall belong in touch to the player who first had hold of it in the field of play, and has not released his hold of it.

34. If the ball when thrown out of touch be not thrown out at right angles to the touch-line, the captain of either side may at once claim to have it thrown out again.

35. A catch made when the ball is thrown out of touch is not a fair catch.

36. *Kick off* is a place kick from the centre of the field of play, and cannot count as a goal. The opposite side must stand at least ten yards in front of the ball until it has been kicked. If the ball pitch in touch it shall be brought back and kicked off again.

37. The ball shall be kicked off (i.) at the commencement of the game, (ii.) after a goal has been obtained, (iii.) after change of goals at half-time.

38. Each side shall play from either goal for an equal time.

39. The captains of the respective sides shall toss up before commencement of the match; the winner of the toss shall have the option of choice of goals, or the kick off. When goals have been changed into half-time, the side which did not kick off at the commencement of the game shall then kick off.

40. Whenever a goal shall have been obtained, the side which has lost the goal shall then kick off.

41. *Kick out* is a drop kick by one of the players of the side which has had to touch the ball down in their own goal, or into whose touch in goal the ball has gone (Rule 21), and is the mode of bringing the ball again into play, and cannot count as a goal.

42. Kick out must be a drop kick, and from not more than twenty-five yards outside the kicker's goal-line: if

the ball when kicked out pitch in touch, it must be taken back and kicked out again. The kicker's side must be behind the ball when kicked out.

43. A player who has made and claimed a fair catch, shall thereupon either take a drop kick or a punt, or place the ball for a place kick.

44. After a fair catch has been made, the opposite side may come up to the catcher's mark and (except in cases under Rule 50) the catcher's side retiring, the ball shall be kicked from such mark, or from a spot any distance behind it.

45. A player may touch the ball down in his own goal at any time.

46. A side having touched the ball down in their opponents' goal, shall try at goal either by a place kick or a punt out.

47. If a *Try at Goal* be made by a place kick, a player of the side which has touched the ball down shall bring it up to the goal-line (subject to Rule 48), in a straight line from and opposite to the spot where the ball was touched down, and there make a mark on the goal-line, and thence walk straight out with it at right angles to the goal-line, such distance as he thinks' proper, and there place it for another of his side to kick. The kicker's side must be behind the ball when it is kicked, and the opposite side must remain behind their goal-line until the ball has been placed on the ground. (See Rules 54 and 55.)

48. If the ball has been touched down between the goal-posts, it must be brought out in a straight line from either of such posts.

49. If the try at goal be by a punt out (see Rule 29), a player of the side which has touched the ball down shall bring it straight up to the goal-line opposite to the spot where it was touched down, and there make a mark on the goal-line and then punt out. The opposite side must keep behind their goal-line until the ball has been kicked. (See Rules 54 and 55.)

50. If a fair catch be made from a punt out or a punt on, the catcher may either proceed as provided by Rules 43 and 44, or himself take a punt on, in which case the mark made on making the fair catch shall be regarded (for the purpose of determining as well the position of the player who makes the punt on as of the other players of both sides), as the mark made on the goal-line in the case of a punt out.

51. A catch made in touch from a punt out or a punt on is not a fair catch; the ball must then be taken or thrown out of touch, as provided by Rule 32; but if the catch be made in touch in goal, the ball is at once dead, and must be kicked out, as provided by Rules 41 and 42.

52. When the ball has been touched down in the opponents' goal, none of the side in whose goal it has been so touched down shall touch it, or in any way displace it, or interfere with the player of the other side who may be taking it up or out.

53. The ball is dead whenever a goal has been obtained; but if a try at goal be not successful, the kick shall be considered as only an ordinary kick in the course of the game.

54. *Charging, i. e.*, rushing forward to kick the ball or tackle a player, is lawful for the opposite side, in case the player who is bringing the ball out after a try at goal has been obtained (see Rules 47 and 48) shall fail to make a mark on the goal-line, in all cases of a place kick after a fair catch or upon a try at goal, immediately the ball touches or is placed on the ground; and in cases of a drop kick or punt after a fair catch, as soon as the player having the ball commences to run or offers to kick, or the ball has touched the ground; but he may always draw back, and unless he has dropped the ball or actually touched it with his foot they must again retire to his mark (see Rule 56). The opposite side in the case of a punt out or a punt on, and the kicker's side in all cases, may not charge until the ball has been kicked.

55. If a player, having the ball when about to punt it out, goes outside the goal-line, or when about to punt on advances nearer to his own goal-line than his mark, made on making the fair catch, or if after the ball has been touched down in the opponents' goal or a fair catch has been made, more than one player of the side, which has so touched it down or made the fair catch touch the ball before it is again kicked, the opposite side may charge at once.

56. In cases of a fair catch, the opposite side may come up to and charge from anywhere on or behind a line drawn through the mark made by

the player who has made the catch and parallel to their own goal-line; but in the case of a fair catch from a punt out or a punt on, they may not advance further in the direction of the touch-line nearest to such mark than a line drawn through such mark to their goal-line and parallel to such touch-line.

In all cases (except a punt out and a punt on) the kicker's side must be behind the ball when it is kicked, but may not charge until it has been kicked.

57. No hacking, or hacking over, or tripping up, shall be allowed under any circumstances.

58. No one wearing projecting nails,

A. The Field of Play.
B. In Goal.
C. In Touch.
D. Touch in Goal.
E. Goals.
F. Run In.
G. Mark on Goal-line.
H. Place Kick.
I. Cross-bar.

iron plates, or gutta-percha on any part of his boots or shoes, shall be allowed to play in a match.

59. Unless umpires be appointed, the captains of the respective sides shall be the sole arbiters of all disputes, and their decision shall be final. If the captain of either side challenge the construction placed upon any Rule, he shall have the right of appeal to the Rugby Union Committee.

60. Neither half-time nor no-side.

shall be called until the ball is fairly held or goes out of play, and in the case of a try or fair catch the kick at goal shall be allowed.

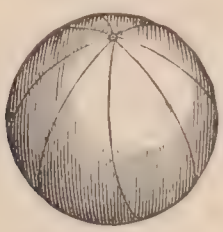
Sect 4.—Method of playing the Game.

The diagram on the preceding page represents a field of play under Rugby Union Rules. The ball used should be egg-shaped, as seen in the following wood cut :

The object of this is to enable a player to pick it up and run more readily with it than he would be able to do were the ball perfectly round. There are usually fifteen players a side in a Rugby Match, who are disposed of as follows : Ten are put forward, two at half-back, one at three-quarters back, and two at back. Before the commencement of the game, the captains toss for choice of goals. The winner usually selects that which gives him the advantage of having the wind at his back. The players being drawn up in a line facing each other, the captain of the losing side kicks the ball off from the centre of the ground, none of the opposite side being allowed to advance to within ten yards of it until it has been started. Once in the air, the game has commenced in downright earnest. A player on the opposite side to that which kicked off usually succeeds in catching the ball, and returns it as far as he can into his rivals' territory. Here it is again picked up, but probably before the player can kick it back he is seized upon and held. Once fairly held, he must cry "Down," when he is released and the forwards on either side form themselves into a compact mass, each striving to urge the ball which has been put on the ground in their midst, towards the other's goal. This is what is termed a scrummage. Outside the scrummage are the half-backs on the alert, so that if the ball emerges from it one of them can pick it up, and rush towards his adversaries' goal-line. Directly the forwards are aware that the ball is no longer between them they separate. Meanwhile the possessor of the ball is running to touch it down, which must be done by grounding it behind his rivals' goal-line. But the backs, three-quarter backs, and half-backs on the other side are in the way to arrest his progress if they can. This is done by catching hold of him, in any way ; but you must not trip him or catch him below the knee. Before the rules of the Rugby Game were modified you were allowed to stop a man's running with the ball by kicking, or shinning him, which was known as hacking. This practice is now, however, forbidden. Supposing the player who has the ball is not stopped or collared by any of his opponents, he runs in and touches it down, as near behind their goal as he can—say at the point F. This secures for him a try (see Rule 6). The mode in which the try is made is as follows : One of the side to whom it belongs picks the ball up at F and walks towards the goal-line BB to G ; he here makes a mark with his heel and then proceeds to the point H ; a nick is then made in the ground, on which he places it, and another player, who has been in readiness, rushes at it and kicks it towards the opponents' fortress. Should it pass over the crossbar I, a goal is scored (see Rule 5). Another mode of obtaining a goal is when a player in the midst of the game gets hold of the ball and drops it (lets it fall to the ground and catches it on the rise) over the crossbar. Until within the past two seasons a match could only be decided by goals, but in the absence of these a game can now be won by tries (see Rule 7). It is by no means an easy matter to give hints to players about so intricate a game as that played by the Rugby Union, but we may mention that forwards should always keep their eyes on the ball when in the scrummage and not go blindly pushing about without knowing whether they are kicking the ball or not. A scrummage should always be entered with the head well down, as by that means the forwards pack much more closely and present a more compact body to resist their opponents. Always play together and unselfishly, aiming at victory for your side and not at individual distinction ; use your feet

well, keep always on the *ball*, and back up quickly. Immediately the ball has emerged from a scrummage break up; forwards seldom break away quickly enough from a scrummage, out of which the ball has issued. The backs, half-backs, and three-quarter backs have much greater opportunity of distinguishing themselves than the forwards. On them in a great measure devolves not only the task of defending their own fortress in case of an attempt to run in by the opposite side, but they have much more frequent chances of making the attack. A half-back should have plenty of dash, good dodging powers, strength on his legs, and be able to make the drop-kick with either foot. Backs should be able to catch the ball with safety, run well, drop quickly, and tackle with promptness and firmness.

The Association Game has fewer rules and is much more simple than its rival. The ball should be perfectly round as follows:



Association Ball.

The main principle of the Association Game is dribbling or kicking the ball along the ground. The use of the hands is forbidden altogether except on the part of the goal keeper, who is allowed to use them in defending his goal. The field of play is the same as with the Rugby Game except that there is no touch in goal, and that the object of the players is to kick the ball under the tape instead of over the cross-bar. There are no tries in the Association matches, which are decided by the number of goals obtained. Should a player in trying to defend his goal-line send it behind it himself he gives his rivals the privilege of a corner kick. The ball is taken to the angle where the goal line and touch-line meet. The attacking party draw themselves in a line in front of their opponents' goal. One player then kicks the ball towards the mouth of the goal, and the others strive to kick it or drive it between the posts. The following directions are from the pen of a prominent player: (1.) Keep moving throughout the whole game. If you cannot run fast, trot, and failing that make the best of your way to reach the ball first. (2.) Back up hard throughout the whole game. (3.) Shots at goal are more successful when made with the side of the foot, and should be made as hard as possible. (4.) Never hesitate. Do at once and quickly what you have to do. Half-backs should charge at the ball with pluck. This will enable their backs to take matters more coolly. They (the half-backs) should take the ball from the opposing forwards and give it to their own forwards, whenever they may be in a good position. Failing this, they should so disconnect their enemies that they fall an easy prey to their backs.

Sect. 5.—Dress.

The Dress of a football player usually consists of a thick woollen jersey, flannel trousers or knickerbockers, a flannel cap, and each club is commonly provided with a certain uniform bearing the colour or colours whereby its identity is established. Ordinary boots may be used; but in the case of a back player, laced boots with thick soles are advisable; while an "up" or forward player, used to gentle rather than long kick, often affects cricket shoes divested of spikes, or boots so light as not to impede the pace of the player.

Sect. 6.—Accessories of the Game.

The Materials required for playing the game are of the most simple and inexpensive character, and usually consist of a ball, a few poles for the purpose of making the bounds, and any ground will be found suitable, the irregularities of turf and other causes which militate so much against cricket being of no moment in the pursuit of football. The ball is composed of a leather case, about eight or nine inches in diameter, made up of stout calf leather, sewn together. A large bladder, which used formerly to be a good ox bladder, but now is composed almost universally of india-rubber, is then introduced into the ball, afterwards blown

up till it nearly fills the case, leaving a small part outside, which, being tied securely, is pushed inside until the leather case is completely distended. Footballs, which with care will last for three or four years, vary in price from 6*s.* to 15*s.* After play, it is advisable to grease the balls well, and afterwards hang them up—a plan especially needful in wet weather.

CHAPTER III.

BOWLS.

Sect. 1.—General Remarks.

This is an extremely simple game, requiring only a bowling-green, a "jack," and an indefinite number of bowls, one for each player. The arena should be a level piece of turf, from 30 to 50 yards wide, according to the capabilities of the ground. The bowls are made of *lignum vitæ*, or any other hard and heavy wood, and they are made of a more or less oval form, according to the fancy of the player. The bias is given by the inner half of the bowl being made less than the outer, the bias increasing in proportion to the "leanness" of the inner half of the bowl. Formerly the bowls were made spherical in shape, and the bias was obtained by loading the inner half with lead; but this practice has nearly died out. The bias of each bowl must be mastered before the player can hope to be successful. The green must be kept perfectly level, and "as smooth as a bowling-green." The theory of the game is extremely simple, and merely consists in each person playing his own bowl, so as to remain as near as possible to a particular mark, denominated the "jack," the chief difficulty consisting in mastering the bias, the effect of which is greater than an inexperienced person would at first imagine.

Sect. 2.—Definitions.

Jack.—A ball (often made of white earthenware) to be played at by the respective players with their bowls.

Pegs.—Two pegs or pins, usually of bone or wood connected by a cord made fast to one peg, and working freely through a hole in the other peg. They are used for measuring.

Standard.—Some light substance (usually a straw or reed) used when a very precise "measure" is required. It can only be claimed when the bowls lie within a yard of the jack.

Measure.—Ascertaining by the aid of pegs or a standard which of two opposing bowls is the nearer to the jack after an end as been played.

Rub or *Set.*—When a jack or a bowl in its transit strikes or touches any object or thing on the green which alters or impedes its motion.

Footer.—A small piece of carpet or other materal or thing placed to indicate the spot on which the player is to stand whilst in the act of delivering the jack or bowl.

Cast or *Point.*—Used in counting the game, which is called "up" when a sufficient number of casts have been scored by one side,

Dead Bowl.—A bowl played or knocked off the green, or against a bowl lying in the ditch, or an illegally played bowl. No bowl after becoming dead shall be allowed to remain on the green. If fencing be used at any part of the green, then if any bowl or the jack do touch such fencing it shall be deemed off the green.

Mark, and *Set a Mark.*—The delivery of the jack at the beginning of each end, in and for the purpose of actual play. To constitute a mark the jack must be bowled 21 yards at the least from the footer, and must be on, and at least three feet from the edge of, the green. No objection can be made to a mark after a bowl has been played at it.

Turning the Jack.—A player doing any palpable act to indicate that he claims the game to be up as the bowls then lie, and his opponent allowing the claim. The only period in a game at which this can be done is when the claimant or his partner has one bowl to deliver after all the bowls of the opposite side have been played.

Void End.—When neither side can score a cast.

Call the game.—Openly declaring in the hearing of the players the state of the score (that is, the number of casts obtained) on each side. The score of the side entitled to the jack must be first called.

Umpire.—A person appointed to mark the score, measure, call the game, and decide all questions which may arise during a game. The umpire shall not in any case give any advice to the players, and he shall not give them any information except when either player shall appeal to or ask him for information. Each side may have an umpire. If there be two umpires, and they cannot decide, they may call in a disinterested third person as referee. Every decision of the umpires or referee shall be final and binding on the players.

SECT. 3.—THE LAWS.

1. *The Game.*—The game may be played by several single players, or two or more partners on each side. The players shall play alternately until each shall have delivered both his bowls. In case of partners, one on either side shall play alternately both bowls, the others following in like manner.

2. *Partners and the Lead.*—At the commencement of each game the players may cast lots or toss for partners, the lead, and for the choice of the jack, which shall be one of the jacks belonging to the green, and not one belonging to an individual.

3. *Setting the Mark.*—The leader shall set the mark, but he shall not deliver the jack without allowing his opponent following the opportunity of seeing its delivery and watching its course from a point near the footer. If the leader in two trials shall fail to deliver the jack a mark, his opponent is then entitled to set the mark, but not to play first at it. The defaulter must play first, after an opponent has set the mark. If the opponent at one throw of the jack do fail to set a mark, the jack is again taken by the first defaulter or his partner, subject to the original penalty.

4. *Bowls and Jack.*—Each player shall have two bowls, which may be of such size and bias as he shall think fit. The jack shall be not less than $3\frac{1}{4}$ inches, or more than $3\frac{3}{4}$ inches in diameter. The jack shall not be changed during a game, except by mutual consent of the players. The bowls may be changed, but not during the playing of an end, or after the jack has been delivered for an end.

5. *The Footer.*—Each set of players shall have a footer. Every player must place his foot on the footer whilst in the act of delivering either the jack or his bowl. If a player deliver his bowl with the right hand, his right foot must be on the footer; and if he deliver his bowl with his left hand, his left foot must be on the footer when playing. In case a bowl be played in contravention of this law, such bowl may, at the option of the opponent, be declared a dead bowl. In case a player shall have taken up the footer after playing his bowl, which by reason of a rub or set has to be replayed, the footer shall be replaced as nearly as possible in its former position, by or with the consent of an opponent.

6. *Placing the Footer.*—After each end is concluded, the footer shall be placed by the last player at the jack. The leader in the succeeding end may, before playing the jack, remove the footer anywhere he pleases within the space of one yard from the spot where the jack lay at the termination of the preceding end. A void end shall be included in this provision. When the jack is knocked off the green, the footer must be placed a yard from the edge of the green, and within a yard on either side from the spot where the jack is taken out of the ditch; provided that if more than half the bowls have not been played, the jack and the bowls actually played shall be returned, and play resumed from the spot where the footer was then placed.

7. *Playing out of Turn.*—If either play out of turn, the other side must play two following bowls if there are two to be played, but no other penalty will attach.

8. *Playing before a previous Bowl has stopped.*—No player shall deliver a bowl whilst the jack or a preceding bowl is in motion, otherwise his bowl shall be deemed a dead bowl. The leader shall always follow (*i. e.* play the first bowl after) the jack.

9. *Playing an Opponent's Bowl.*—Whenever an opponent's bowl is played by mistake he may play the other's bowl, or he may take up the wrongly played bowl and substitute the proper

bowl as nearly as possible in the exact position in which the other rested.

10. *Displacement of Jack.*—If a jack be displaced by a bowl belonging to another party, the end shall be deemed a void end.

11. *The Score.*—Before commencing play, the number of casts to be scored to make the game up shall be fixed. The player or side first scoring the number so fixed, shall win the game.

12. *Scoring the Game.*—After an end is played, the players' side, whose bowl or bowls is or are placed nearest to the jack, shall count one cast in the game for each bowl so placed. The leader must call the game before setting a fresh mark; and if he neglect to do so, his opponent may claim to have the jack returned, but this must be done before a bowl is played. If after the game is so called an objection be not made before the succeeding end is finished, the game shall be deemed to have been correctly called, and cannot afterwards be corrected or questioned. In case an objection be made, the question must be settled before proceeding with the game.

13. *Measurement.*—If any doubt arise as to which bowl or bowls is or are nearest to the jack, either side may claim a measure. In measuring, one player shall hold the measuring apparatus to his own or his partner's bowl, and the opponent shall hold it to the jack. If a standard be claimed, the party leading must make and give the standard to the opposing party. In measuring with a standard, the bowl first measured must be taken away; and if the opponent can make the standard rest on his or his partner's bowl and the jack, he wins the cast. If a second standard be claimed for a second cast, the party winning the first cast by standard measure must make and give the second standard.

14. *Displacement of Bowls or Jack in Measuring.*—If during a measure or otherwise the jack be displaced by a player, he shall lose as many casts as are claimed and in question; and if a bowl be displaced, the player displacing it shall lose the cast, provided that whenever a bowl rests on another, and the bowl rested on has to be removed to allow the other one to be measured at the point nearest the jack, such removal shall be done as carefully as possible by an opponent or his umpire, and the bowl must be measured as it settles afterwards. If it cannot be decided which of the two bowls is nearest the jack, then it is a tie, and neither counts.

15. *Accidents to Jack.*—Should the jack, whilst running for a mark, rub or set, or stop in the line of another party's play, it must be thrown again; but no penalty shall attach in such case.

16. *Right of Mark.*—When two jacks are sent near to the same land for a mark, the one which is first stationary can keep the place, and the other one must be returned to its party.

17. *Accidents to Running Bowls.*—If a running bowl before it has reached the parallel of the jack do rub or set on any person (not of the playing party), or on a bowl or jack belonging to another party, it can be played again; and if touched by the player or his partner it becomes a dead bowl; but if a bowl during its progress shall be stopped by an opponent before it reaches the parallel of the jack, the player shall have the option of placing the said bowl wherever he may think fit. Every bowl which shall rub or set after it has run two yards past the parallel of the jack becomes a dead bowl, except it shall rub or set on a bowl belonging to the playing party, or on an opponent, in any of which cases it shall remain at the place where it stops.

18. *Striking the Jack.*—If a player do strike the jack with his bowl, and if the jack do rub or set on a bowl or person not belonging to the party, the end becomes a void end; but if the jack do rub or set on a bowl belonging to the playing party, it must remain at the place whence it is removed by the strike. When the jack is struck off the green the end is a void end. If the jack do rub or set on an opponent, it shall be the option of the striker whether the jack shall remain where it rests, or whether it shall be a void end.

19. *Striking a Bowl.*—If a bowl be struck and if it do rub or set on the striker's partner, the opponents shall score one point. If a bowl be struck and it do rub or set on an opponent, the striker shall score one point, and in either case the end shall be deemed to be finished.

20. *Displacement of a Bowl.*—If a bowl which has stopped after bieng

played be displaced by an opponent or other person (except a partner), or if a bowl or jack belonging to another party do rub or set on it, such bowl shall be replaced as nearly as possible in its former position; but if such bowl be displaced by the player or his partner, it becomes a dead bowl.

21. If a bowl be displaced by any of the playing party after all the bowls have been played and before the casts are admitted, without the consent of his opponent, he forfeits as many points as the end would otherwise have admitted being scored.

22. *Casualty in the Delivery of a Bowl.*—If a player, when in the act of delivering his bowl, let it slip, and allow it to run beyond his reach, he cannot, without the consent of his opponent, leave the footer for the purpose of recovering the bowl, but it is considered a played bowl; he may, however, recover the bowl if he can do so without leaving the footer.

23. *Blocking at Hand.*—No player, for the purpose of blocking, shall play his bowl a less distance than three yards from the footer, and if he do so it shall be deemed a dead bowl. In blocking, the bowl must be played, not placed.

24. *Instructing a Partner.*—A player may instruct his partner in any way except by showing him how his opponents' bowls lie, provided that he shall not, whilst his partner is in the act of playing, place or retain any object between his partner and the jack which can have the effect of indicating the land to be taken, or otherwise assisting his partner. Spectators are not allowed to instruct, or give to a player any information whatever relating to a game.

25. *Turning the Jack.*—The last player may decline to play his last bowl if the game be already up without his play; or he may request his partner to turn the jack; and if this be allowed by an opponent, then such last player may play, and if he disturb the position of either the jack or bowls, it shall not alter the game; but if a player turn the jack without having a sufficient number of casts to make the game, or his opponent not having played his last bowl, he shall forfeit as many points as the end will allow to have been made.

26. *Playing in the Dark.*—If during the progress of a game it becomes so dark that the jack cannot be distinctly seen from the footer, the game shall be postponed to a future day, unless the players are unanimous to play off in the dark; in which case neither party can place a light at the jack, nor can any person be allowed to stand at it, except a partner, without the consent of the opponents.

27. *Refusing to Play a Game Out.*—If a player commence a game, and without sufficient cause (in the judgment of the umpire) refuse to finish, he shall forfeit it.

28. *Stopping another Party's Bowl.*—No person, while his bowl is running, shall stop a bowl belonging to another party during its course, to prevent its rubbing against his own bowl. Should he stop the other party's bowl, it must be returned, and his own bowl must be considered a dead bowl.

29. *A Player following up his Bowl.*—No player, after delivering his bowl, shall approach within one yard of it during its progress.

30. *A Party continuing to Play.* Should a party continue to play, without throwing in again, one of the losers of the previous game shall lead the jack.

CHAPTER IV.

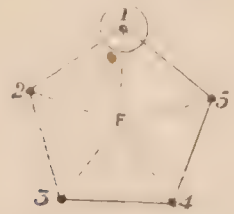
ROUNDERS AND BASE BALL.

Sect. 1.—Rounders.

This was formerly a very favourite game in some of our English counties, but has now been displaced in great measure by cricket. Besides an ordinary field or playground, it requires only a ball and a stout stick—the latter being about fifteen inches in length, and as large as can be conveniently grasped by the hand; and the former any common ball, such as is used for

tennis, &c., and composed ordinarily of a centre of cork or India-rubber covered with worsted, wound tightly round so as to make a sphere, and finally covered with sheepskin.

THE GAME IS PLAYED by first fixing on five equi-distant spots or "bases," from fifteen to twenty yards apart, as shown in the annexed figure:—



In the centre of this is a spot, F, where the "feeder" stands, to toss the ball to the one who has the bat, and who stands at 1 in diagram. Two sides are chosen, as in football, one of which goes "in," while the other is "out," this being decided by tossing up the ball and scrambling for it, or by "heads or tails," or by any other fair mode. There should not be less than 10 or 12 players in all, and 24 or 30 are not too many. The "in" side begin by standing at position 1 in diagram, called "the house;" one of them taking the "bat," while the feeder, who is one of the "out" party, standing at his "seat" F, tosses (not throws) a ball at his knees or thereabouts, after calling "Play!" The rest of the "out" party are distributed over the field round the outside of the pentagon. When the ball is thus given, the batman's object is to hit it far and low over the field; and he is put out at once—first, if he fails to strike it; secondly, if he tips it and it falls behind him; thirdly, if it is caught before it falls to the ground, or after a *single* hop or rebound; or, fourthly, if the ball hits him after he has left his base, and while not standing at another base. The "in" player may refuse to strike for three balls consecutively; but if he attempts and fails, or if he does not strike at the fourth ball, he is out.

The SCORE is made by the "in" party as follows:—Each player, after striking the ball, runs from his base to another, or to a second, third, fourth, or even all round, according to the distance he has hit the ball, and scores one for each base he touches; and if while running between the bases he is hit by the ball, he is put out. If the ball falls among nettles or other cover of the same kind, "lost ball" may be cried by the "out" party, and four only can be scored. After one of the "in" party has hit the ball and dropped the bat, another takes his place; and, on receiving the ball as before, he strikes it, or fails, as the case may be. If the latter, he is put out; but the previous striker or strikers, if they are standing at their bases, are not affected by his failure. If the former, he drops the bat like his predecessor, and runs round the pentagon also like him, being preceded by the previous strikers; and all being liable to be put out by a blow from the ball. The feeder is allowed to feign a toss of the ball, in the hope of touching some one of the players, who are very apt to leave their bases before the hit, in the hope of scoring an extra one by the manœuvre.

When only one of the side is left in, the others being all put out, he may call for "three fair hits for the rounder," which are intended to give him and his side another innings if he can effect the following feat:—The "outs," with the feeder, stand as usual, the rest of the striker's side besides himself taking no part. The feeder then tosses the ball as usual, which the striker may refuse as often as he pleases; but if he strikes at it he must endeavour to run completely round the pentagon once out of three times, he being allowed three attempts to do it in. If he is struck on the body, or caught, or if he fails in getting round, he and his party are finally out, and the other side go in; but if he succeeds in getting round, his side go in again for another innings, but have not afterwards another such chance of redeeming their play.

The "out" field are disposed on the same principles as at cricket, part for slight tips, and the remainder for long balls, and catch, stop, or return them, just as in that game.

SECT. 2.—BASE BALL.

This game, which is a modification of Rounders, has long been very extensively played in America. Last year (1874) an attempt was made to introduce it into this country, but its signal failure prevents any necessity for describing it here.

CHAPTER V.

FIVES, RACQUETS, TENNIS, LAWN TENNIS, AND BADMINTON.

Sect. 1.—Fives.

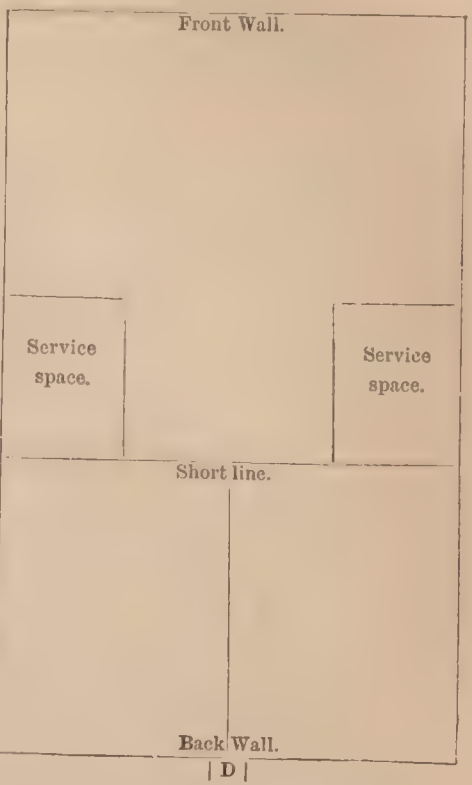
This is a game of great antiquity, and is generally played with the hand. It may be played either in an "open" or a "closed" court. The former is a very simple affair, merely requiring a high and smooth wall, with a level asphalte area in front. For a "closed" court two side walls must be added. Along the "back" wall, a piece of board, about six inches wide, and the top edge generally three feet from the ground, should be nailed. The chief point in the game is for the ball to strike the wall above this line, which is made of wood; and the sound caused when the ball strikes the board instantly signals a foul stroke.

The game is now almost entirely confined to our chief public schools, where it is played according to certain traditional, but unwritten, codes of laws. In all, however, the main object is to make the ball hit the front wall above the wooden board. Eton, Harrow, Rugby, Marlborough, and Cheltenham, each play a different kind of game, whilst Winchester indulges in the pastime termed "bat fives," now, I believe, almost if not quite obsolete elsewhere.

Sect. 2.—Racquets.

Racquets is a similar description of game to fives, except that it is played with a catgut bat instead of the hand, and the ball is much smaller, being about an inch and a half only in diameter. It may be played either in an open or closed court. As the latter is now in almost universal use, I will confine myself to a description of that alone.

The Best Area for a double-match court is 80 feet by 40 feet. The front wall should be 30 feet high, and the back one 12 feet, covered in by a roof well lit with skylights. In a single-match court, the usual area is 60 feet by 30 feet. The "short" line is 32 feet from the back wall in the double court, and 24 in the single one; and the two service spaces in each are 8 feet 6 inches by 6 feet 6 inches. The following is a diagram of the court, which is alike for the double and single match, the only difference being in the dimensions that have just been given.



The back part of the floor of the court is divided into two equal oblongs, into one of which the ball must be served according to the court from which the "man in" is serving. A line is drawn across the front wall 2 feet 2 inches above the floor of the court, and all the space below this line should be covered with deal board, painted black, like the walls of the court. The object of the wood is to tell by the sound when a ball strikes on it, as in this case the ace counts against the side that struck the ball. Another white line on the front wall, 7 feet 9 inches above the floor, is called the "cut line," above which the ball must be served when the player first goes in. An entrance door (D) flush with the wall on the inside, is placed in the middle of the back wall, the bottom of it being level with the floor of the court; and a spectators' gallery is usually built on the top of the back wall. but not projecting into the court.

The best material for the walls is brick, well and evenly plastered, in order to be true, and then covered with a good coat of black paint.

The Racket is composed of a long handle ending in an oval frame, which

is crossed by catgut; and also is of a regulation-pattern and size.

The Balls are very hard, about the size of a large walnut, and covered with leather.

The following Rules are those usually observed :—

1. The game to be 15 up. At 13 all, the out-players may set it to 5; and at 14 all, to 3, provided this be done before another ball is struck.

2. The going in first, whether odds be given or not, to be decided by lot; but one hand only then is to be taken.

3. The ball to be served alternately right and left, beginning whichever side the server pleases.

4. In serving, the server must have one foot in the space marked off for that purpose. The out-player to whom he serves may stand where he pleases, but his partner, and the server's partner, must both stand behind the server till the ball is served.

5. The ball must be served above, and not touching the line on the front wall, and it must strike the floor before it bounds, within and not touching the lines enclosing the court on the side opposite to that in which the server stands.

6. A ball served below the line, or to the wrong side, is a fault, but it may be taken; and then the ace must be played out, and counts.

7. In serving, if the ball strikes anywhere before it reaches the front wall, it is a hand out.

8. In serving, if a ball touch the server or his partner before it has bounded twice, it is a hand out, whether it was properly served or not.

9. It is a fault—(*a*) if the server is not in his proper place; (*b*) if the ball is not served over the line; (*c*) if it does not fall in the proper court; (*d*) if it touch the roof; (*e*) if it touch the gallery-netting, posts, or cushions. The out-player may take a fault if he pleases, but if he fail in putting the ball up, it counts against him.

10. Two consecutive faults put a hand out.

11. An out-player may not take a ball served to his partner.

12. The out-players may change their courts once only in each game.

13. If a player designedly stop a ball before the second bound, it counts against him.

14. If a ball hit the striker's adversary above or on the knee, it is a let; if below the knee, or if it hit the striker's partner or himself, it counts against the striker.

15. Till a ball has been touched, or has bounded twice, the player or his partner may strike it as often as they please.

16. Every player should get out of the way as much as possible. If he cannot, the marker is to decide if it is a let or not.

17. After the service, a ball going out of the court or hitting the roof is an ace; a ball hitting the gallery-netting, posts, or cushions, in returning from the front wall, is a let; but if it hit the roof before reaching the front wall, it counts against the striker.

18. The marker's decision is final but if he has any doubt, he should ask advice, and if he cannot decide positively, the ace is to be played over again.

Sect. 3.—Tennis.

Tennis is a most ancient game, as well as a most intricate and difficult one to play. It was probably first played in France during the middle ages, though remains of ancient buildings very much resembling tennis-courts have been found in Mexico. About the end of the fifteenth century the French game was divided into *longue paume* and *courte paume*, the latter being the same as the modern game of tennis. The former game is still extant in France, and was formerly played in this country also; but it had long been extinct here until recently, when a modified form of it has become popular under the name of "lawn tennis," which will be described in the next section.

The Tennis Court is a very complicated one, and the area varies according to circumstances, but is usually about 95 feet by 35 feet, and is covered in.

A low net, three feet above the floor in the middle, hangs across the court, exactly in the middle, and is termed "the line." One side of the court so divided is called the "service side," and the other the "hazard side," and at the end of the former the "dedans" is situated, where the spectators sit, and on the hazard side are the "grille" and "tambour." The left hand side of the court, looking from the dedans, is divided into a series of galleries, and the pent-house, or sloping roof, extends along the whole of this side and the two ends; the floor being divided into "chases" by lines drawn across.

The game requires a bat somewhat stronger and of a slightly different shape to a racket one, and a large number of balls.

THE GAME IS PLAYED in "sets," consisting of the best of eleven games, each of which has four points, viz. 15, 30, 40, and game. When "40-all" is reached it is called "deuce," and then two points *in succession* must be gained in order to score the game; if each side gains one the score reverts to deuce. A return into the last gallery on the hazard side, the dedans, or grille, counts a point, but in the case of chases they have to be played out. The other minutiæ of the game are so intricate that they can only be explained by actually playing.

The best work on the subject has recently been written by Mr. Julian Marshall. It is published at 346, Strand.

SECT 4.—LAWN TENNIS.

LAWN TENNIS requires a level ground (turf, asphalt, or cement); and the *court* must be marked out with whitening and water, as in diagram (which also see for dimensions). For double games the court is 9ft. wider.

The court is divided across the middle by a *net*, the ends of which are attached to two *posts*, which stand 3ft. outside the court on each side. The net is 3ft. high at the centre; and 4¾ft. for single games, 4ft. for double games, at the posts.

Balls are required of hollow india-rubber, covered with white cloth, not less than 2½in. nor more than 2⅝in. in diameter, and not less than 1¾oz. nor more than 2oz. in weight; and rackets, similar to those used at the game of tennis, only rather lighter.

It is advisable to play in flannels, and to wear racket shoes, with india-rubber soles, and with flat heels.

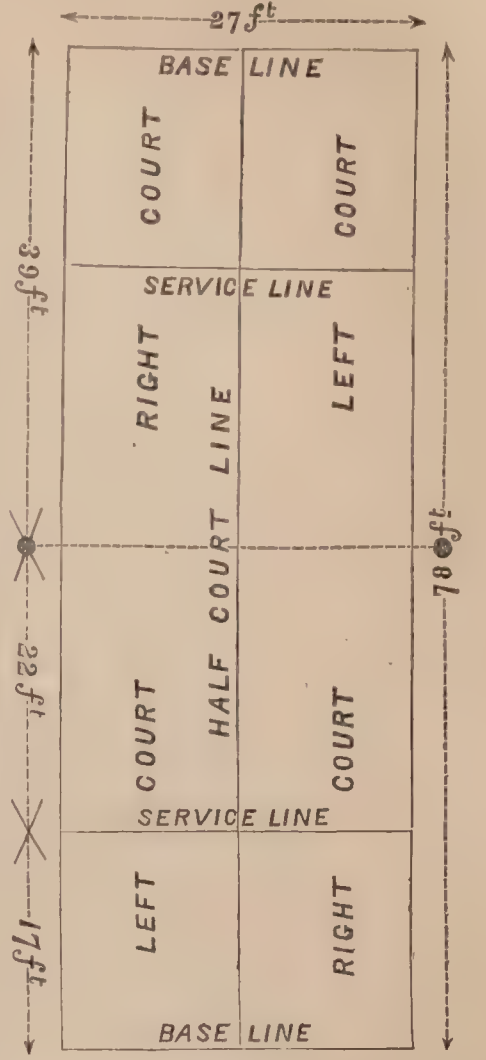


DIAGRAM OF LAWN TENNIS COURT

THE GAME IS PLAYED by two or more persons. The opponents occupy the courts on opposite sides of the net, choice of courts and the right of serving being decided by toss, thus:—If the winner of the toss chooses the right to serve, his opponent has choice of sides, and *vice versâ*.

SINGLE-HANDED GAMES.—The player who first delivers the ball (or *server*) stands with one foot outside the base-line, and strikes the ball over the net

with the racket, into the diagonally opposed court, so that the ball first touches the ground (or *drops*), between the net and the service line. His adversary (called the *striker-out*) has to *return* the service, *i.e.* he has to strike the ball back over the net after it has dropped, and before it touches the ground a second time (or *falls*). The service must not be *volleyed*, *i.e.*, taken before it drops. The server then has to return the ball again, and so on until one player fails. It will be observed that the service must be from right court to right court, or from left to left; but the return is good if the ball drops anywhere in the court. Also service and return are good if the ball touches the net and drops in the proper court. The lines which bound the courts are included in them, *i.e.* a ball which drops on a line is deemed to be in court.

If the service is not in accordance with the conditions mentioned above it is a fault. A fault may not be taken. The server serves again from the same court. After two faults or after a good service his next service is from the left court, and so on from right and left alternately.

The server wins a stroke if the striker-out (*a*) volleys the service; or if he (*b*) fails to return the service or the ball in play; or if he (*c*) returns it so that it drops out of court.

The striker-out wins a stroke if the server (*a*) serves two consecutive faults; or if he (*b*) fails to return the ball in play; or if he (*c*) returns it so that it drops out of court.

Either player loses a stroke if he (*a*) touches or strikes the ball in play more than once; or if (*b*) the ball after a good service or return touches him or anything he wears or carries, except his racket.

If a player attempts to return a ball and misses it altogether, and it drops out of court, the stroke counts to him, just as though he had made no attempt to return it.

Scoring.—The strokes are called 15, 30, 40, and game. If both players reach 40, the score is called deuce. At deuce one player must win two consecutive strokes to win the game. The first stroke is called advantage, and the next either game or deuce, according to the result of the stroke.

Example.—*A* plays *B*. *A* wins the first stroke, 15 love. If *A* wins the next stroke he is 30 love; if *B* wins it the game is 15-all, and so on after each stroke won.

When the first game is finished the score is one game-love. The striker-out in the previous game becomes server, and so on after each game. A *set* is the best of eleven games. When a series of sets is played by the same players, they change sides at the end of each set, the one who struck-out in the last game of the first set serving in the first game of the next.

Racket Scoring. — When this is adopted the server is called *hand-in* and the striker-out *hand-out*. Only the hand-in can score; if he loses a stroke he becomes hand-out, and his opponent becomes hand-in, and serves. Each stroke won by the hand-in counts one point to him. The game is 15 up; but if both players win 14 points, the game is set to 3. The score is called love-all, and the player who first scores 3 points wins the game.

Double Games are played in the same way except as follows:—The pair first in decide which partner shall serve; in the second game the opposing pair similarly decide. The partner of the first server serves in the third game, and the partner of the second server in the fourth, and so on. The first service in each game is delivered from the right court. The strikers-out take the service alternately in right and left courts. A player may not take a service delivered to his partner. The order of service and striking-out, once arranged, must not be altered during the set; but may be varied at the commencement of each set. After the service either player may return the ball; but if one player touches the ball his partner may not return it. At racket scoring, only one partner of the side that is hand-in serves at the beginning of each game. During the rest of the game when there is one hand-out, the partner serves from the court from which the previous service was not delivered. When both partners are hand-out, the other side becomes hand-in.

When one player plays against two, he serves in alternate games, or has two hands in, unless otherwise agreed.

Odds. — When players of unequal strength are engaged the strongest may give odds as follows:—(Tennis

Scoring): A bisque, or stroke that may be claimed by the receiver at any time during a set. Half-fifteen or a stroke at the beginning of the second and every alternate game of a set. Fifteen a stroke every game, and so on up to forty. A bisque may be combined with these odds, *e.g.* if half-fifteen for a bisque is given, the weaker player has half-fifteen, the stronger player has a bisque in diminution. If half-fifteen and a bisque is given, the receiver of odds has half-fifteen, and in addition a bisque. Half the court compels the giver of odds to return every ball on one or other side of the half-court line, as may be agreed, the line counting in his court; but service is given from right and left courts alternately. Half court may be combined with other odds.—(Racket Scoring): One or more points may be given in a game, or the privilege of being hand-in two or more successive times, or half-court, or any combination of these.

Hints.—(1) Hold the racket with an open face, *i.e.* with the striking face inclined somewhat upwards, instead of perpendicular to the ground. (2) Stand with the feet about half a yard apart, the shoulder pointed towards the net, the face looking towards the side of the court. (3) Strike from the shoulder. Keep the arm extended, the wrist straight, elbow and knees slightly bent. When taking the ball near the ground the knees must be considerably bent. Do not get into a habit of striking hard. (4) Endeavour to send the ball within 2ft. or 3ft. of the top of the net (but not too close, for fear of playing it into the net), and do not spoon it up in the air. [In double games where one player stands near the net this does not apply to the return; the ball must then be sent high enough to clear the front man's reach, or placed to one or other side of him.] (5) Return the ball, as a rule, as it is falling, and when near the ground. (6) In volleying, the ball scarcely requires to be hit at all; sufficient strength is obtained by gently approaching the racket face to the ball. Half-volleying consists in playing the ball when close to the ground, immediately after it has dropped. Volleys and half-volleys, as a rule, are only to be played when the ball cannot be conveniently taken on the bound, as they are difficult and uncertain strokes. (7) Learn to place the ball, *i.e.* to return it to any part of the adverse court at will. To do this the stroke must be timed. Thus: the striker is on the central line, his face looking to the right of the court. If he takes the ball just before it comes opposite his right shoulder, the return will be to the left of the central line. If he strikes when the ball is about opposite his shoulder, it will return parallel to the central line; if he waits until the ball has passed his shoulder, its direction will be more to the right of the central line. It is not necessary to shift the body in order to place the ball; but as the stroke, when the ball is in a line with the shoulder, gives the fullest command over the ball, it is advisable, when there is plenty of time, to shift the body slightly to the right or left to obtain this stroke. (8) The racket held with an open face should be carried downwards and forwards onto the ball. The open face gives sufficient elevation to the ball to carry it over the net, and the cut (as it is called) enables the striker to return the ball more sharply, as a cut ball drops more quickly to the ground than one that is not cut; hence it can be played more swiftly than a ball that is not cut, and so the difficulty of the opponent's next return is increased. Cut can be put on all balls struck low or at a medium height from the ground. When a ball is not purely cut, but played with what is called overhand or underhand twist (*i.e.* by striking the ball on the side instead of below), the effect is to cause it to describe a lateral curve in the air, and to bound to the right or left when it touches the ground. This mode of striking the ball is useful under certain circumstances of the game, but twist is a stroke that should be sparingly employed by beginners. (9) Watch your opponent's racket; if you see him cutting or putting on twist, make allowance for it thus: If the ball is purely cut, stand well back from it, as it will rise very little, and will shoot after it comes into contact with the ground; if it is twisted overhand, stand almost in front of the spot where it will drop, as its bound will be from you; if it is twisted underhand (which you will distinguish from a purely cut ball by the lateral curve taken by the twisted ball), stand well to the left of the spot on which the ball will drop, as it will bound to you.

Sect. 5.—Badminton.

Badminton requires a ground similar to lawn tennis, only smaller viz. 42ft. by 20ft.; posts 6ft. high; net 5ft. high. Shuttlecocks are used instead of balls; they should be about 5 inches in height, and about 1 oz. in weight. Some players prefer shuttlecocks only 3 inches high and ¾ oz. in weight, with a strong thread passed in and out between the feathers, and tied, to make the diameter at the top about 3 inches. Rackets similar to those employed in the game of rackets, are required, only rather smaller.

The game is played in precisely the same way as lawn tennis, only every stroke must be volleyed. If the shuttlecock touches the ground, the player who allows it to do so loses a stroke.

The Rules of lawn tennis should be adopted. Some players prefer the following modifications, *which, however, are not recommended*: (1) The ground is sometimes narrow in the middle instead of oblong, and the service line brought to within 5ft. of the net. (2) The service is sometimes delivered from any part of the court between the base line and service line, and, if the service line is brought close to the net as above stated, the service must drop between the service line and base line of the diagonally opposed court. Under this modified system, a service which drops between the service line and the net is a fault. (3) Sometimes, if a service drops on a line inclosing the court served into, or if a return drops on the external boundary line, it is a let, and counts for nothing. This rule is utterly useless. If a let intervenes between two faults, they are deemed consecutive. (4) Sometimes, if a shuttlecock touches the net or posts and goes over, it is a fault in the service or loss of a stroke in the return. (5) Sometimes the game is set thus: At 13-all, the out-player may set to 5—*i.e.* may take the remainder of the game five up instead of two up; and similarly at 14-all, the out-player may set to 3. (6) In partner games, the out-players are sometimes allowed to change courts once during the game to receive the service.

CHAPTER VI.

GOLF.

Sect. 1.—General Remarks.

Golf is daily becoming more popular amongst all classes of the Scottish community, and is making rapid progress in other parts of the United Kingdom and also in the Colonies. Boys and old men enjoy its fascinations with equal zest, and both gain health and strength by the exercise and easy muscular exertion brought into play. Ladies' golf-clubs are now becoming established on various links. They play at a set of short holes, from twenty to fifty yards apart, and have their medals and other competitions. The principal ladies' club is at St Andrews, the headquarters of golf in Scotland. The following are the chief golfing centres in Scotland: Aberdeen; St Andrews, Fife; Bruntsfield, Edinburgh; Burntisland, Cupar, Elie, Leven, Fife; Glasgow; Greenock; Monifieth, Carnoustie, Montrose, Forfar; Musselburgh, Mid-Lothian; North Berwick, Gullane, Aberlady, Dirleton, and Dunbar, East Lothian; Perth; Prestwick, Ayrshire; and Lanark. The game has likewise its votaries in England at Blackheath and Wimbledon; at Bideford, North Devon; Crookham, Berks; Manchester; Alnmouth, Northumberland; and Hoylake, Cheshire; and in Ireland at the Curragh Camp; in several provinces of India; at the Cape of Good Hope, Australia, &c.

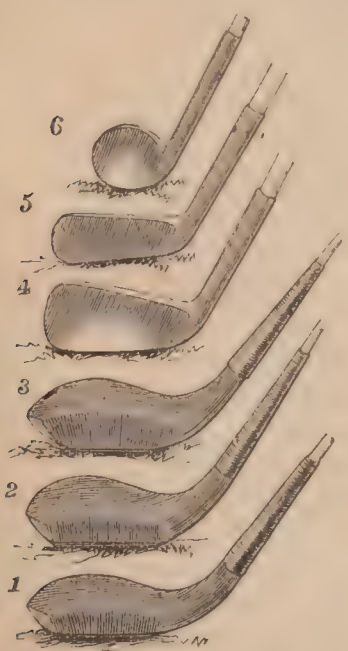
Sect. 2.—The Links.

The ground over which golf is played is called "links," and is usually a sandy soil in the neighbourhood of the seashore, its surface covered with short grass, here and there interrupted by breaks, pits, and inequalities, and a mile or more in extent. These interruptions are necessary to impart interest to the game, for where the ground is completely smooth the sport becomes insipid, there being then little opportunity of exhibiting dexterity of play. The track along which the players pro-

ceed is denominated "the course," and may be either rectilinear, or a figure of any number of sides. A series of small round holes, about four inches in diameter, and several inches in depth, are cut in the turf, at distances of from 100 to 400 or 500 yards from each other, according to the nature of the ground. If the links happen to be broad and expansive, the holes are placed so as to make the golfing course a somewhat circular one; if they are long and narrow, the holes are placed from end to end. But, whether the direction taken be from the starting-hole once round a course somewhat circular, or from the starting-hole to the end and back again on a straight course, the term invariably applied to each series of holes played is a *round*.

Sect. 3.—The Clubs and Balls.

The Materials employed consist of small hard balls of gutta-percha, and clubs of forms suited to the nature



VARIOUS FORMS OF CLUB-HEADS.

1. Play-club; 2. Putter; 3. Spoon; 4. Sand-iron; 5. Cleek; 6. Niblick.

of the ground. The latter are named as follows: The play-club, putter, driving-putter, long-spoon, mid-spoon, short-spoon, baffing-spoon, sand-iron, cleek, and niblick: the last three have iron heads, the others are of wood. In some links, several of these clubs may be, and usually are, dispensed with, and the number reduced to six or seven; but in greens such as at St Andrews, Musselburgh, Prestwick, and some others, they all come into requisition more or less.

The Play-club, or Driver, is for swiping off the tee, and is further used throughout the green if the ball is lying fair, and the distance more than a full drive between the ball and the hole you are approaching.

The Long-spoon comes into play when the ball lies in a hollow, or a declivity, or on slightly rough *grassy* ground; it derives its name from having the face scooped, so as to allow of its getting under the ball, and driving it forth a longish distance, if well struck. This club is useful, too, for elevating a ball, and driving it over hazards, such as bunkers, whins, &c.

The Short-spoon is a very useful club, and is frequently in the golfer's hands during the course of the day. It is used for playing either good-lying or bad-lying balls when within a hundred yards or so from the hole; this is termed playing the "short game." Much depends on this short game; and many a far, and even sure driver through the green has been beaten by the indifferent swiper but deadly short-game player.

The Putter (*u* sounded as in "but") is a short-shafted, stiff club, with a flattish head and square face; it is used when the ball arrives within close proximity to the hole, generally within thirty yards, and is usually considered the best club for "holing out" the ball. To be "a good putter," is what all golfers aim at, and comparatively few ever attain. Long and showy driving is of much commoner occurrence than "deadly" putting, and one who can gain a full stroke on his opponent between two far-distant holes frequently loses his advantage by missing a "put" within a yard of the hole!

The Sand-iron comes into play when the ball lies in a "bunker," or sand-pit. It is a short, thick-shafted, stiff weapon with an iron head, hollowed out in the centre, and somewhat sloped backward. On its lower edge, it is straight and sharp, which allows of its digging under the ball, and pitching it out of "grief" on to grass. When a ball lies in whins or other hazards of a similar

nature, in roads amongst "metal," or over the head in long deer-grass or bents, the iron is the best club for freeing it from such impediments, and is, therefore, the one generally used. It is well adapted for "lofting" balls over hazards; or for lofting or pitching "steimies"—that is, when the opponent's ball lies so directly between the player's ball and the hole as to render it impossible for the player to use his putter. He then takes his iron and attempts to loft his own ball over his adversary's and into the hole—a feat which, when accomplished, invariably calls forth admiration.

The CLEEK is not so thick in the shaft, and is rather longer than the sand-iron; it is used chiefly for driving balls out, or lofting them over, certain hazards that happen to lie between the ball and hole near the putting green; it is also useful for putting where the ground is rough. The iron head of the cleek is straight in the face, and slopes backward.

The NIBLICK is of very important service when the ball lies in a cart-rut, horse-shoe print in sand, or any round or deep hollow not altogether beyond the player's reach, and not well suited for the iron. The head is very small and heavy, about one-half the size of that of the sand-iron, and is shaped into a hollow about the size of a crown-piece, with the iron sloping slightly backward. This peculiarity of shape enables the player to raise his ball out of difficulties from which no other club could extricate it, and ought invariably, where there are bunkers and roads, to from one of every golfer's set.

THE TRUE METHOD OF HANDLING THE CLUB will be seen at a glance in the annexed figure. Let the wrists be free, and grasp your club with moderate pressure, but *not tightly;* in striking, or swiping, as it is called, the eye must never for a single instant wander from the ball, and the club should be swung with moderate speed over the right shoulder, and brought down quickly to the ball—three-fourths of a circle being described by the action. This mode of handling and swinging should be practised before attempting to strike a ball. Never exert your whole strength in delivering a swipe; golf is a game of skill and nice art, not one of brute force, and if too much force be used, the chances are that you *founder* your ball, and either top it or drive it a comparatively short distance. The easier a stroke is taken, the greater the chance of hitting the ball correctly; the mere swing of the club will drive a ball a long distance, and with more certainty of the beginner's keeping the right direction than if much force had been applied. In standing to the ball, the feet should

be moderately well apart (about a foot and a half is sufficient), and the left foot should be nearly opposite the ball, at a distance varying with the clubs used; for instance, in using the ordinary driving-club, two feet and a half is a good distance between foot and ball. Be careful not to exceed this distance, nor be much within the mark, as the player is apt, when standing too far from his ball, to fall *in* to it, and run the chance of making a bad shot. When standing too near, the ball is often *heeled*, or struck with that part of the club-head nearest the shaft. When this is the case, the ball flies off to the right. When standing too far, the ball is apt to be "drawn" or "hooked"—that is to say, struck with the point or "toe" of the club, in which case the ball flies in to the left.

The manufacture of balls used to be a distinct trade by itself, and that of clubs another, but now most club-makers also make balls. The price of a ball is 1*s.*, and of a club 4*s.* 6*d.*: irons are rather dearer.

SECT. 4.—THE GAME.

The rival players are either two in number, which is the simplest arrangement, or four (two against two), the former being called a single match, and the latter a double or foursome match, the ball in foursome matches being

struck alternately by each partner: or the game may be played by three or more persons, each playing his own ball. The object of every player, whether in a single or double match, is to drive the ball in a series of strokes from one hole towards and *into* another in as few as possible.

The opponents, who are provided each with a set of clubs and balls, commence at the starting-hole (which is also the finishing-hole), and strike off their balls in the direction of the first. In playing from hole to hole, he who succeeds in *holeing* in fewer strokes than his opponent wins that hole; but if both players hole their balls in the same number of strokes, the hole is halved. From the first they drive towards the second hole; and so on till the round is finished—that is to say, till they arrive at the hole from which they started. The winner is he who has gained more holes in the round than remain to be played; thus, the match may be gained by a player being, say, two ahead and one to play, or three ahead and two to play, or even more.

A match may, however, consist of, say, three rounds, in which case he who has gained more holes than remain to be played gains the match. Matches between professional players sometimes extend to as many as 108 holes, played on three different links. Sometimes, when players are very equally matched, neither party has, at the close of a day's play, gained an advantage; every round has been halved, or each party has won an equal number of rounds, hence the match itself is halved, and remains to be played another day.

If the skill of one player is superior to that of his opponent, the former gives odds to the latter, to equalise their play. Thus, A possesses an advantage over B. They start to play a round, and the round consists of, say, eight holes. If the difference of their skill be not very great, A possibly allows B two strokes on the round, which, for example's sake, affects B's chances thus: B agrees to take his strokes between the first and second and third and fourth holes, and off they go. After having played from the start to the first hole, which we will suppose they have on equal terms halved, A puts his ball into the second hole in five strokes, and B in the same number. Now, were they playing on even terms, as in the previous hole, the hole would have been again halved; but here B's extra stroke does him service; so, having been allowed one off, he wins the hole. If A had holed his ball in five, and B in six strokes, the hole would have been halved, B's extra stroke, allowed, equalising the reckoning. They strike off towards the third hole, which A wins; so here they are all even. On the next hole (between the third and fourth) B has his second and last extra stroke, which probably makes him the winner of the hole. For the rest of the round they play on equal terms; B is one ahead, and three holes yet to play. If he can succeed in halving, and keeping his advantage, he may win the round, but he possibly drives his ball into some *hazard*—such as sand or whin-bushes—from which he is only extricated after expending one or more strokes in the operation, and loses at least that hole, if not the match.

THE PRINCIPAL CONDITIONS of the game are as follows:—The *tee* (which is a small pinch of sand upon which the ball is placed to present a fair stroke in playing off from each hole) must be not less than four, and not more than six club-lengths from the first hole, and may be either in front of or to the side of it; and after the balls are struck off, the ball lying farthest from the hole to which the parties are playing is played first. The balls must not be changed before the hole is played out. All loose impediments within twelve inches of the ball may be removed when the ball lies on grass—but so as not to move the ball—or from the *putting-green* or table-land on which the hole is placed, which is considered not to exceed twenty yards from the hole. When the ball lies in a *bunker*, or otherwise on sand, however, it is not permitted to remove or touch the sand or other obstacle with the club before playing. A ball must not be touched or moved except in playing, and there are penalties for touching, or moving, or stopping the course of a ball. But whatever happens to a ball by accident, irrespective of the player, must be submitted to, being considered a *rub of the green*. If a ball is *lost*, the owner loses the hole.

An exhaustive work upon this Scottish national pastime, in which Golf Clubs,

great matches, peculiarities of the game, anecdotes, and other interesting subjects are treated, has been prepared, and issued from his own press, by one of Scotland's best players, Mr. Robert Clark, of Edinburgh.

CHAPTER VII.

CROQUET.

Sect. 1.—General Remarks.

This game after a somewhat stormy career has now settled down into a condition of what may be called abeyance, owing to a variety of causes. In the first place, it has two distinct phases which act on each other in a way far from beneficial. In its first or highest aspect it is a game requiring not only great manual skill and correctness of eye, but also scientific calculations of mechanical laws and the doctrine of chances, which few have the power to combine with sufficient nerve to make them, when present, available at the right time. The billiard player is often surprised at being told that these qualities are required in croquet to a greater extent than in his favourite game, but nevertheless the statement is quite true. In billiards there is seldom any difficulty in knowing what ought to be the next stroke, and the player rarely makes his calculations beyond placing his balls for the following one; but in croquet, not only has the player often to choose between two, three, or even four strokes, but he has to consider how he shall leave his balls for the next five, six, or sometimes seven or eight, following strokes. It is quite true that in croquet the ground is not perfect like a billiard table, and that a chance shot will often defeat the best play; but this still further necessitates calculation, and renders coolness and science more necessary. No doubt the temper is often sorely tried by this defeat of skill by chance, but the uncertainty adds to the interest of the game, just as in cricket, which, in great measure from this cause, has gone on yearly increasing in popularity. On the other hand, the social game is made a rival of the scientific by those who either do not possess or will not employ the powers I have described, and, instead of aiding the scientific development of croquet, they delay it by all the means in their power. In the present year (1875) lawn tennis has also been made a strong rival of both forms of the game, but the two are so completely distinct that they ought not to interfere with each other in the slightest degree. Lawn tennis is a fine strong exercise for those young men who require it, but it is wholly unsuited to any beyond middle age, and it cannot bring the two sexes on the same ground with advantage. In fact, it is quite unsuited to ladies, even when played by themselves, except on lawns which are so near a private house as to allow of a change of dress before and after play. Croquet as now played on the grounds of the All England Club at Wimbledon, with hoops only one-eighth of an inch larger than the balls, and rigidly fixed in oaken sockets, requires as much practice as billiards to arrive at perfection, and it will take a long time to bring the great body of players up to the standard developed there, just as was the case in billiards. Fifty years ago no private player could put together a break of ten, whereas now such an event is expected in almost every game played on a tolerably good table. So with croquet, we find the Moffatt, Wirral, Dublin, Bedford, Brighton, Richmond, Worthing, and other croquet clubs gradually creeping up to the level of the A. E. C. C., and although they do not yet use fixed sockets, they many of them adopt $3\frac{3}{4}$ inch hoops.

Of the Social Game and its tactics I shall not attempt any description here, beyond stating my opinion that in point of detail it matters little either what setting is adopted or what balls and hoops are used. I would, however, impress on all players the importance of adopting the Conference Code of Laws, and of playing strictly in accordance with them. Without this precaution disputes are sure to arise, and this is the great drawback to the

game, but they are certainly less likely to occur when there is a settled code to refer to than in the opposite case.

THE SCIENTIFIC GAME has been recently treated of in almost an exhaustive manner by Mr. James D. Heath, who held the championship of All England for two successive seasons; and to this little book I must refer those of my readers who wish to study the game under this aspect. A large first edition was soon exhausted, showing not only the appreciation by the public of its merits, but the extent of the hold taken of this form of the game, which is certainly far greater than I had expected. Several thousand copies of the Conference Code are also annually sold by the publishers, Messrs. De La Rue, which still further confirms this conclusion.

SECT. 2.—THE LAWS OF CROQUET.

Since the last edition of this book was published, in 1870, the Conference Code has been again and again revised by the Secretaries of the various Croquet Clubs, who have voted on its component clauses. In the present year and in 1874 no revision has been desired, and the code may be taken as settled—standing now as follows:—

RECOMMENDATIONS.

The committee make the following recommendations, subject to such variations as local players may find it convenient to adopt:—

A full-sized croquet ground should measure 40 yards by 30 yards. Its boundaries should be accurately defined.

The hoops should be of half-inch round iron, and should not be more than 6 inches in width, inside measurement. The crown of the hoop should be at least 12 inches clear of the ground. A hoop with the crown at right angles to the legs is to be preferred.

The pegs should be of uniform diameter of not less than 1½ inches, and should stand at least 18 inches above the ground.

The balls should be of boxwood, and should not weigh less than 14 ounces each.

The four-ball game is recommended for adoption in preference to any other.

When odds are given, the bisque is recommended. A bisque is an extra stroke which may be taken at any time during the game in continuation of the turn. A player receiving a bisque cannot roquet a ball twice in the same turn without making an intermediate point. In other respects, a bisque confers all the advantages of an extra turn. A player receiving two or more bisques cannot take more than one in the same turn. Passing the boundary, or making a foul stroke, does not prevent the player taking a bisque.

It is essential to match-play that bystanders should abstain from walking over the grounds, speaking to the players or the umpires, making remarks upon them aloud, or in any way distracting their attention.

DEFINITIONS.

A *Point* is made when a hoop is run, or a peg is hit, in order.

The striker's hoop or peg *in order* is the one he has next to make. The order is shown by dotted lines in the diagrams of settings. (See page 703.)

A *Roquet* is made when the striker's ball is caused by a blow of the mallet to hit another which it has not before hit in the same turn since making a point.

The striker's ball is said to be *in play* until it roquets another. Having made roquet, it is *in hand* until croquet is taken. *Croquet* is taken by placing the striker's ball in contact with the one roqueted, the striker than hitting his own ball with the mallet. The non-striker's ball when moved by a croquet is called the *croqueted ball.*

A *Rover* is a ball that has made all its points in order except the winning peg.

THE LAWS.

1. *Mallets.*—There shall be no restriction as to the number, weight, size, shape, or material of the mallets; nor as to the attitude or position of the striker; nor as to the part of the mallet held, provided the ball be not struck with the handle, nor the mace stroke used.

2. *Size of Balls.*—The balls used in match-play shall be 3⅝ inches in diameter.

3. *Choice of Lead and of Balls.*—It shall be decided by lot which side shall have choice of lead and of balls. In a succession of games the choice of lead shall be alternate, the sides keeping the same balls.

4. *Commencement of Game.*—In commencing, each ball shall be placed on the starting spot (see Settings). The striker's ball, when so placed and struck, is at once in play, and can roquet another, or be roqueted, whether it has made the first hoop or not.

5. *Stroke, when taken.*—A stroke is considered to be taken if a ball be moved in the act of striking; but should a player, in taking aim, move his ball accidentally, it must be replaced to the satisfaction of the adversary, and the stroke be then taken. If a ball be moved in taking aim, and then struck without being replaced, the stroke is foul (see Law 25).

6. *Hoop, when run.*—A ball has run its hoop when, having passed through from the playing side and ceased to roll, it cannot be touched by a straight-edge placed against the wires on the side from which it was played.

7. *Ball driven partly through Hoop.*—A ball driven partly through its hoop from the non-playing side cannot run the hoop at its next stroke, if it can be touched by a straight-edge placed against the wires on the non-playing side.

8. *Points counted to Non-striker's Ball.*—A ball driven through its hoop, or against the turning peg, by any stroke not foul, whether of its own or of the adverse side, counts the point so made.

9. *Points made for Adversary's Ball.*—If a point be made for an adversary's ball, the striker must inform his adversary of it. Should the striker neglect to do so, and the adversary make the point again, he may continue his turn as though he had played for his right point.

10. *The Turn.*—A player, when his turn comes round, may roquet each ball once, and may do this again after each point made. The player continues his turn so long as he makes a point or a roquet.

11. *Croquet imperative after Roquet.*—A player who roquets a ball must take croquet, and in so doing must move both balls (see Law 25). In taking croquet, the striker is not allowed to place his foot on the ball.

12. *Ball in Hand after Roquet.*—No point or roquet can be made by a ball which is in hand. If a ball in hand displace any other balls, they must remain where they are driven. Any point made in consequence of such displacement counts, notwithstanding that the ball displacing them is in hand.

13. *Balls Roqueted simultaneously.*—When a player roquets two balls simultaneously, he may choose from which of them he will take croquet; and a second roquet will be required before he can take croquet from the other ball.

14. *Balls found touching.*—If at the commencement of a turn the striker's ball be found touching another, roquet is deemed to be made, and croquet must be taken at once.

15. *Roquet and Hoop made by same Stroke.*—Should a ball, in making its hoop, roquet another that lies beyond the hoop, and then pass through, the hoop counts as well as the roquet. A ball is deemed to be beyond the hoop if it lies so that it cannot be touched by a straight-edge placed against the wires on the playing side. Should any part of the ball that is roqueted be lying on the playing side of the hoop, the roquet counts, but not the hoop.

16. *Pegging out.*—If a rover (except when in hand) be caused to hit the winning peg by any stroke of the same side, not foul, the rover is out of the game, and must be removed from the ground. A rover may similarly be pegged out by an adverse rover.

17. *Rover pegged out by Roquet.*—A player who pegs out a rover by a roquet loses the remainder of his turn.

18. *Balls sent off the Ground.*—A ball sent off the ground must at once be replaced 3 feet within the boundary, measured from the spot where it went off, and at right angles to the margin. If this spot be already occupied, the ball last sent off is to be placed anywhere in contact with the other, at the option of the player sending off the ball.

19. *Ball sent off near Corner.*—A ball sent off within 3 feet of a corner is to be replaced 3 feet from both boundaries.

20. *Ball touching Boundary.*—If the boundary be marked by a line on the turf, a ball touching the line is deemed to have been off the ground. If the boundary be raised, a ball touching the boundary is similarly deemed to have been off the ground.

21. *Ball sent off and returning to Ground.*—If a ball be sent off the ground, and return to it, the ball must

be similarly replaced, measuring from the point of first contact with the boundary.

22. *Ball sent within 3 feet of Boundary*—A ball sent within 3 feet of the boundary, but not off the ground, is to be replaced as though it had been sent off; except in the case of the striker's ball, when the striker has the option of bringing his ball in, or of playing from where it lies.

23. *Boundary interfering with Stroke.*—If it be found that the height of the boundary interferes with the stroke, the striker, with the sanction of the umpire, may bring in the balls a longer distance than 3 feet, so as to allow a free swing of the mallet. Balls so brought in must be moved in the line of aim.

24. *Dead Boundary.*—If, in taking croquet, the striker send his own ball, or the ball croqueted, off the ground, he loses the remainder of his turn; but if by the same stroke he make a roquet, his ball, being in hand, may pass the boundary without penalty. Should either ball while rolling after a croquet be touched or diverted from its course by an opponent, the striker has the option given him by Law 26, and is not liable to lose his turn should the ball which has been touched or diverted pass the boundary.

25. *Foul Strokes.*—If a player make a foul stroke, he loses the remainder of his turn, and any point or roquet made by such stroke does not count. Balls moved by a foul stroke are to remain where they lie, or be replaced, at the option of the adversary. If the foul be made when taking croquet, and the adversary elect to have the balls replaced, they must be replaced in contact as they stood when the croquet was taken. The following are foul strokes:—(*a*) to strike with the mallet another ball instead of or besides one's own, in making the stroke; (*b*) to spoon—*i.e.* to push a ball without an audible knock; (*c*) to strike a ball twice in the same stroke; (*d*) to touch, stop, or divert the course of a ball when in play and rolling, whether this be done by the striker or his partner; (*e*) to allow a ball to touch the mallet in rebounding from a peg or wire; (*f*) to move a ball which lies close to a peg or wire by striking the peg or wire; (*g*) to press a ball round a peg or wire (crushing stroke); (*h*) to play a stroke after roquet without taking croquet; (*i*) to fail to move both balls in taking croquet; (*k*) to croquet a ball which the striker is not entitled to croquet.

26. *Balls touched by Adversary.*—Should a ball when rolling, except it be in hand, be touched, stopped, or diverted from its course by an adversary, the striker may elect whether he will take the stroke again, or whether the ball shall remain where it stopped, or be placed where, in the judgment of the umpire, it would have rolled to.

27. *Balls Stopped or Diverted by Umpire.*—Should a ball be stopped or diverted from its course by an umpire, he is to place it where he considers it would have rolled to.

28. *Playing out of Turn, or with the Wrong Ball.*—If a player play out of turn, or with the wrong ball, the remainder of the turn is lost, and any point or roquet made after the mistake. The balls remain where they lie when the penalty is claimed, or are replaced as they were before the last stroke was made, at the option of the adversary. But if the adverse side play without claiming the penalty, the turn holds good, and any point or points made after the mistake, are scored to the ball by which they have been made (that is, the ball is deemed to be for the point next in order to the last point made in the turn), except when the adversary's ball has been played with, in which case the points are scored to the ball which ought to have been played with. If more than one ball be played with during the turn, all points made during the turn, whether before or after the mistake, are scored to the ball last played with. Whether the penalty be claimed or not, the adversary may follow with either ball of his own side.

29. *Playing for Wrong Point.*—If a player make a wrong point it does not count, and therefore (unless he have, by the same stroke, taken croquet, or made a roquet), all subsequent strokes are in error, the remainder of the turn is lost, and any point or roquet made after the mistake. The balls remain where they lie when the penalty is claimed, or are replaced as they were before the last stroke was made, at the option of the adversary. But if the player make another point, or the adverse side play, before the penalty is

claimed, the turn holds good ; and the player who made the mistake is deemed to be for the point next in order to that which he last made.

30. *Information as to Score.*—Every player is entitled to be informed which is the next point of any ball.

31. *State of Game, if disputed.*—When clips are used, their position, in case of dispute, shall be conclusive as to the position of the balls in the game.

32. *Wires knocked out of Ground.*—Should a player, in trying to run his hoop, knock a wire of that hoop out of the ground with his ball, the hoop does not count. The ball must be replaced, and the stroke taken again ; but if by the same stroke a roquet be made, the striker may elect whether he will claim the roquet or have the balls replaced.

33. *Pegs or Hoops not upright.*—Any player may set upright a peg or hoop, except the one next in order, and that must not be altered except by the umpire.

34. *Ball lying in a Hole or on Bad Ground.*—A ball lying in a hole or on bad ground may be moved with the sanction of the umpire. The ball must be put back—*i.e.* away from the object aimed at—and so as not to alter the line of aim.

35. *Umpires.*—An umpire shall not give his opinion, or notice any error that may be made, unless appealed to by one of the players. The decision of an umpire, when appealed to, shall be final. The duties of an umpire are—(*a*) to decide matters in dispute during the game, if appealed to ; (*b*) to keep the score, and, if asked by a player, to disclose the state of it ; (*c*) to move the clips, or to see that they are properly moved ; (*d*) to replace balls sent off the ground, or to see that they are properly replaced ; (*e*) to adjust hoops or pegs not upright, or to see that they are properly adjusted.

36. *Absence of Umpire.*—When there is no umpire present, permission to move a ball, or to set up a peg or hoop, or other indulgence for which an umpire would be appealed to, must be asked of the other side.

37. *Appeal to Referee.*—Should an umpire be unable to decide any point at issue, he may appeal to the referee, whose decision shall be final ; but no player may appeal to the referee from the decision of an umpire.

Sect. 3.—Management of Prize Meetings.

The following Recommendations for the management of Prize Meetings have been drawn up by the Committee of the A. E. C. C.

1. *Conference Laws binding in Matches.*—In matches played on the Club Ground at Wimbledon, the conference laws as revised in 1873 shall be adhered to.

2. *Committee to Settle Details.*—The committee (three to form a quorum) shall settle all details connected with the prize meetings of the club as far as practicable, in accordance with the following Rules. In the case of open meetings (where there is no committee established) the secretary should associate with himself a committee, three to form a quorum.

3. *Size of Ground.*—The grounds shall (if possible) measure 40 yards by 30 yards. Their boundaries shall be accurately defined.

4. *Hoops.*—The hoops above the ground shall be of half-inch round iron or steel. The crown of the hoop shall be straight, and at right angles to the legs. When fixed, the crown shall be at least 12in. clear of the ground.

5. *Pegs.*—The pegs shall be of wood, of a uniform diameter above the ground of 1½in. They shall be at least 18in. in height above the ground.

6. *Balls.*—The balls shall be of boxwood, and shall weigh not less than 14½oz.

7. *Number and Colours of Balls.*—The game shall be played with four balls. The balls shall be coloured respectively, blue, red, black, and yellow, and shall be played in the above order. The blue and black balls shall form a side against the red and yellow.

8. *Setting.*—The setting of the hoops and pegs shall be according to the plan known as No. 3.

9. *Order of Points.*—The order in which the points are to be made shall be according to the plan numbered 3 in the Conference Rules.

10. *Programme.*—A programme shall be issued, which shall specify the size of the grounds, the width of the hoops, the time and place of the draw, and the time and place of the meeting.

11. *Declaration as to Prizes.*—The committee shall declare before the

commencement of play the mode in which the entrance moneys shall be awarded as prizes.

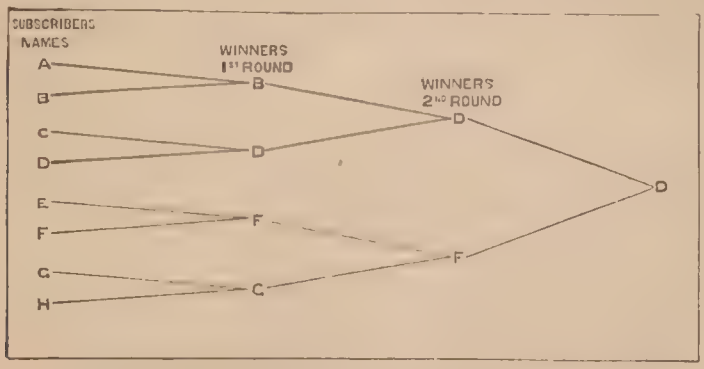
12. *Election and Powers of Referee.*—The committee shall elect a referee. The referee shall have power to appoint umpires, and to settle any doubt, question, or dispute which an umpire professes himself unable to decide, or which may be beyond the province of an umpire.

13. *Entries.*—No entry shall be valid unless the entrance money be paid by such date as the committee appoint.

14. *Right of Subscribers.* — Subscribers shall have a right to be present at the draw.

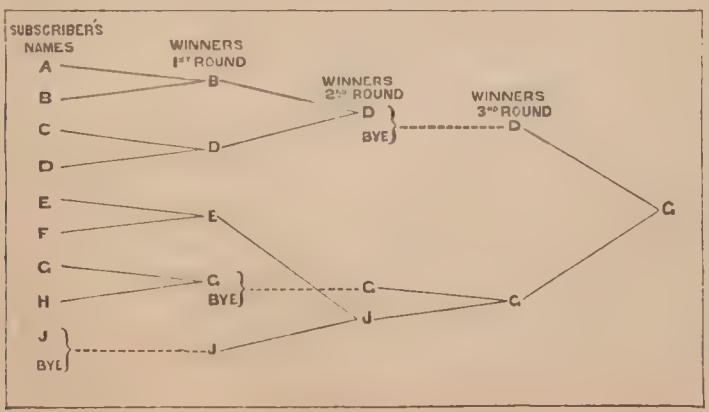
15. *Mode of conducting Draw.*—For the purpose of determining how the players shall meet, each subscriber's name shall be written on a separate slip of paper, and the slips shall be placed together in a bowl or hat, and drawn out in pairs at random.

16. *Rotation of Play.*—When there is no bye the winners of each successive pair shall meet in each round in accordance with the system shown by the following diagram.



17. *Guarding.*—When players who are known to the referee to be related are drawn in the same pair, they shall not play against each other in the first round, but shall be guarded as in the following example: "If A and B (see diagram, Rule 16) are the pair first drawn, and are related, and C and D are the pair next drawn, A, being first drawn, shall keep his place, B shall change places in the draw with C, the first drawn of the next pair. If G and H, the last drawn, are related, F shall change places with G."

18. *Rotation of Play in case of Byes.*—When there is a bye, the player entitled to it shall be the last drawn on the list who has not previously had a bye. No player shall have more than one bye. The following diagram shows how the winners meet in the case of byes.



19. *Absentees.*—If a player be absent when called on by the referee to play, his adversary wins in that round, and is not deemed to have had a bye.

20. *Distribution of Prizes.* — When more than two prizes are given, if four players be left in the last round but

one, the losers in that round shall meet to decide the third and fourth places. For example: In diagram Rule 16, D wins the first prize; F the second. B and G play to decide as to the third and fourth prizes.

21. *Ibid.*—When three players are left in the last round but one, no fourth prize shall be given. When there is a second prize it shall be given to the player beaten in the final round, if the winner had a bye in the previous round; but if not, the two players last beaten by the winner shall meet to decide the second prize, the loser gaining the third prize, when it is given. For example: In diagram Rule 18, G wins the first prize, D and J play for second and third. Had D won in the last round, G would take the second prize and J the third.

22. *Handicaps.*—In handicap matches the players shall be handicapped by the referee before the draw in classes, Class 1 giving one bisque each game to Class 2, two bisques to Class 3, and so on. In like manner Class 2 gives one bisque to Class 3, two bisques to Class 4, and so on, according to the difference of class.

23. *Partner Handicaps.*—In partner handicaps the number of bisques to be given each game shall be half the difference of the classes. If the difference be an odd number, the number of bisques given shall be the nearest whole number greater than half. For example:—A (Class 1) and B (Class 2) play against C (Class 4) and D (Class 5). A B give three bisques to C D each game. If E (Class 6) is substituted for D, A B have to give four bisques.

24. *Ibid.*—In partner handicaps either partner, irrespective of the class to which he belongs, may take the bisques to which his side is entitled.

25. *Time Handicaps.*—In time handicaps the players shall be entered in sets of not more than eight for single matches, and not more than sixteen for partner matches. Each round shall consist of one game. One third of the time at disposal shall be allowed for each game, time being called by the referee at the expiration of each third.

26. *Ibid.*—If the game be not finished when time is called, the side which is ahead in points wins, the striker having the right of finishing his turn and of taking a bisque if entitled to one before the points are counted. If the points be equal, the side which afterwards first makes a roquet wins, but a bisque may not be taken for this purpose.

27. *Ibid.*—In time handicaps, no side which receives more than one bisque shall take more than half its allotted bisques, until both balls have passed the turning peg.

28. *Postponement of Meeting.*—If a meeting appointed to commence upon a certain day be interfered with by weather which, in the opinion of the committee, is unfit for croquet, the committee shall have power to postpone the meeting: but the commencement shall not be postponed beyond the current week.

Sect. 4—Private Play.

The Setting known as No. 3, or six-hoop, is described with the aid of diagrams in the Conference code of rules, and in all public meetings it is almost imperative that it shall be used. As, however, the code must be in the hands of all public players it is unnecessary to insert either the plan or the order of running here. Private players, however. although they are recommended to use these rules and adhere to them, have not always a copy at hand, and for their benefit I append a plan and the order of running of the No. 2 setting. For public play this is now superseded by No. 3; but the former is easier for beginners, and on that score it may well be adopted in private play. A modification of it by using only two hoops between the pegs (the order of running being otherwise the same), is still easier, and when only six hoops are provided it may be advantageously substituted for it. In that case the middle hoop is abolished, and after running the first the order goes on to the left-hand corner hoop at once. For small grounds this is a manifest advantage, and I strongly recommend its adoption when the dimensions are not more than 30 yards by 20 yards.

It is a very common practice on private grounds to play under rules differing widely from those adopted by the Conference of Secretaries, and embodied in the Code known by their name; but the plan cannot be too strongly condemned. It leads to all kinds of disputes; and in every case, before beginning to play, a long time is lost in settling the rules and teaching

hem to those visitors who have not already learned them. Besides this, in case of dispute, there is seldom a written code to refer to, and then con-

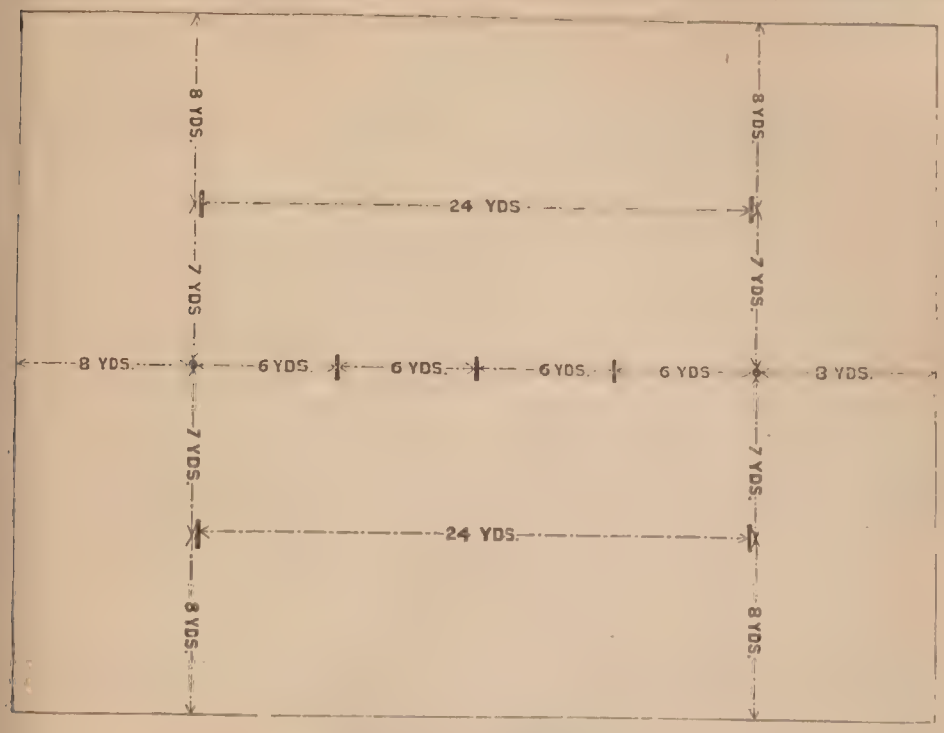
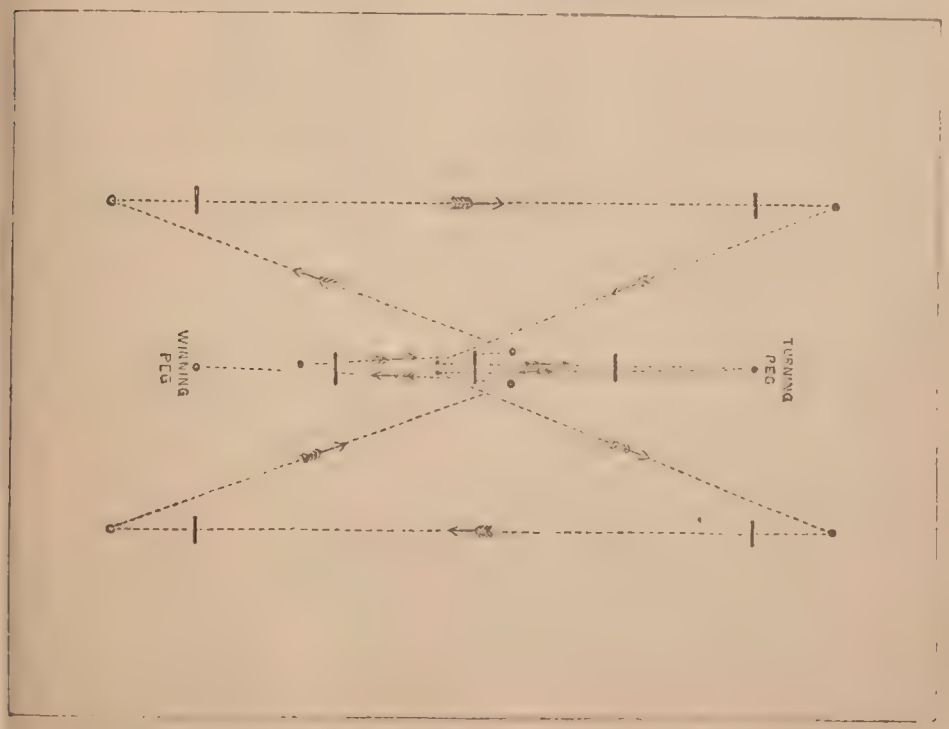


DIAGRAM OF NO. 2 SETTING.

fusion becomes worse confounded. I therefore conclude this article by repeating my advice to adhere strictly to the Conference Code.



ORDER OF RUNNING.

PART III.

RURAL GAMES AND OUT-DOOR AMUSEMENTS.

BOOK II.—MISCELLANEOUS GAMES.

CHAP. I.

ARCHERY.

SECT. 1.—IMPLEMENTS OF THE CRAFT.

FOR THE PURPOSES OF THE ARCHER the following implements are required, which may be obtained at any of the principal makers in Edinburgh or London—first, the bow; secondly, the arrows; thirdly, a quiver, pouch, and belt; fourthly, a tassel and grease pot; fifthly, an arm-guard, or brace, and a shooting-glove; sixthly, a target or targets; and seventhly, a scoring-card.

THE BOW is the most important article in archery, and also the most expensive. It is usually from five to six feet in length, made of a single piece of yew, or of lancewood and hickory

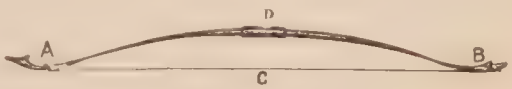


FIG. 1.—THE BOW.

glued together back to back. The former suits gentlemen the best, and the latter being more lively is better adapted for the short sharp pull of ladies. The wood is gradually tapered, and at each end is a tip of horn, the one for the upper end (A) being longer than the other or lower one (B). The strength of bows is marked in pounds, varying from 25lb. to 80lb. Ladies' bows are from 25lb. to 40lb. in strength, and those of gentlemen from 50lb. to 80lb. One side of the bow is flat, called its "back;" the other, rounded, is called "the belly;" and nearly in the middle at D, where the hand should take hold, it is lapped round with velvet, and that part is called "the handle." In each of the tips of horn is a notch for the string, called "the nock."

BOWSTRINGS are made of hemp or flax, the former being the better material; for though at first they stretch more, yet they wear longer, and stand a harder pull as well as being more elastic in the shooting. In applying a fresh string to a bow, be careful in opening it not to break the composition that is on it; cut the tie, take hold of the eye, which will be found ready worked at one end, let the other part hang down, and pass the eye over the upper end of the bow. If for a lady, it may be held from 2 to 2½ inches below the nock; if for a gentleman, half an inch lower, varying it according to the length and strength of the bow; then run your hand along the

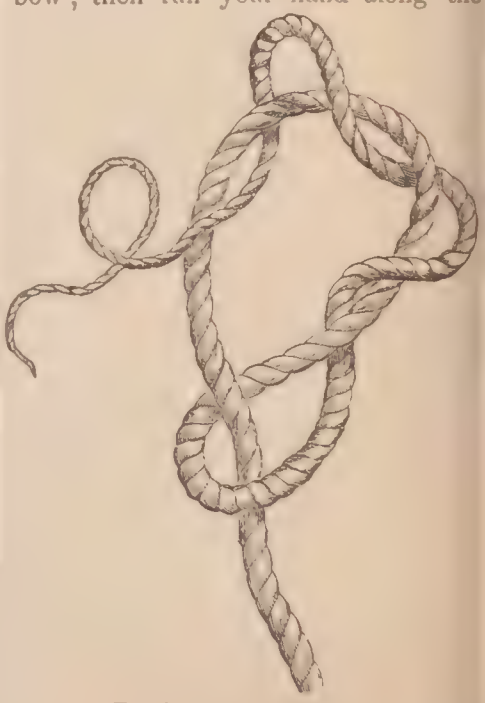


FIG. 2.—BOWSTRING LOOP.

side of the bow and string to the bottom nock, turn it round that and fix it by the noose, called the "timber noose," taking care not to untwist the string in making it. This noose is

merely a simple turn back and twist without a knob, but it is better seen than described. When strung, a lady's bow will have the string about 5 or 5½ inches from the belly; and a gentleman's about half an inch more. The part opposite the handle, namely C, is bound round with waxed silk, in order to prevent its being frayed by the arrow. As soon as a string becomes too soft and the fibres too straight, rub it with beeswax, and give it a few turns in the proper direction, so as to shorten it and twist its strands a little tighter; a spare string should always be provided by the shooter.

THE ARROW.—The first thing to ascertain is, whether it is quite straight, which is done by bringing the tips of the thumb and two first fingers of the left hand together and laying the arrow thereon, while it is turned round

FIG. 3.—THE FOOTED ARROW.

the right hand. If it goes smoothly, is straight; but if it jerks at all, it crooked. Then make sure that it stiff enough to stand the force of e bow without bending, as, if too eak, it will never fly straight. The e or point should be what is called e square-shouldered pile—some pre- the sharp pile, but the other answers best for all purposes. The nock should be full, and the notch pretty deep; a piece of horn should be let in at the notch to prevent the string splitting the arrow. The feathers should be full-sized, evenly and well cut, and inserted at equal distances from each other, as shown in *fig.* 3. It has been much disputed whether the bobtailed, the chested, the barrelled, or the straight arrow is the best to shoot with. Mr. H. Ford, the champion shot, decides in favour of the straight arrow, and the reader cannot do better than take his advice. The arrow should be carefully wiped each time it is picked up, and this not only to preserve it, but also because the least particle of dirt clinging to the pile will effectually spoil the flight of the arrow. Every care should be taken to keep the feathers smooth and stiff; if attention be not paid to this point everything else will be in vain. Should they by chance become ruffled, a little warming in front of a fire (not too close) will generally restore them. The length and weight vary, the latter being marked with the number of shillings they weigh.

THE QUIVER is a long tin case; it is not now, however, used as part of the personal equipment of the archer, but is employed simply for the purpose of protecting the spare arrows. It is made of all sizes, to hold from six to three dozen arrows, and is provided with a cover and lock to make all secure. The best receptacle for arrows, however, is the box which is now almost universally used; in it each arrow has a place to itself, and by this means overcrowding is prevented, and the feathers are preserved unrumpled.

GREASE-BOX.—This is a little box, generally made of ivory, of such a shape as to hang from the belt. It is used for the purpose of holding the grease, which some archers use to anoint the string and their shooting-glove, so as to get a better loose. The advantage of it is a matter of opinion, and so it may remain; if used too freely, however, it causes the bow-string to unravel.

TASSEL is merely a large tassel of green worsted, and is used for wiping the arrows when they have stuck in the ground. If a belt is not used, it should be hung from a button-hole of the coat; it is an absolutely necessary part of the archer's outfit.

The Belt and Pouch.—This is used for carrying the supply of arrows required in a match (three for use and one spare one), as also for the suspension of the tassel, &c. I would, however, recommend gentlemen to do without it—it is always in the way, and the arrows can be carried far better in a pocket made diagonally in the right rear of the coat, so as to

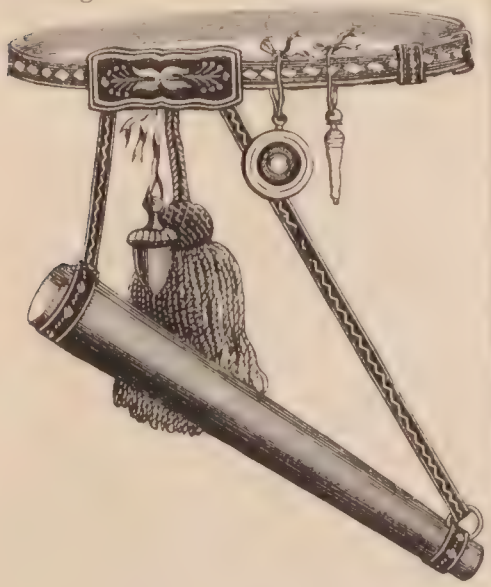


Fig. 4.—Lady's Belt and Pouch.

come conveniently to the hand and yet be far enough back to escape the risk of the feathers being spoilt by the elbow rubbing against them. In *fig.* 4 is depicted a lady's belt, complete with pouch, tassel, grease box, scoring-card, and pricker.

The Bracer.—This is a guard for the left arm, to prevent its being abraded by the string when loosed; it also has another object—viz., to confine the sleeve and keep it out of the way. It consists of an oblong piece of smooth leather, and is fastened to the arm by straps. In fitting it on, care should be taken that the ends of the straps are not left loose, and that the buckles come well round to the back of the arm, so as not to be in the way of the string; for if there be the least projection on which it can catch, your best aim will be of none effect.

The Shooting-glove is used to protect the fingers of the right hand from abrasion by the string when loosing, and consists of three finger-guards, attached by strips of leather, passing down the back of the hand to a strap fastening round the wrist. This form of glove has, however, rather gone out

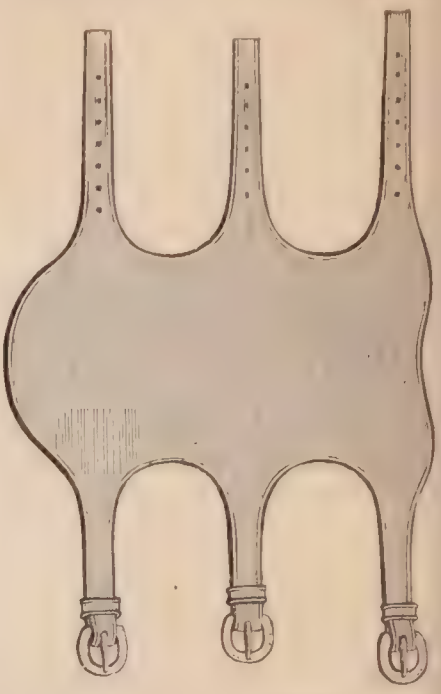


Fig. 5.—The Bracer.

of use of late years, most archers preferring independent guards (called tips)

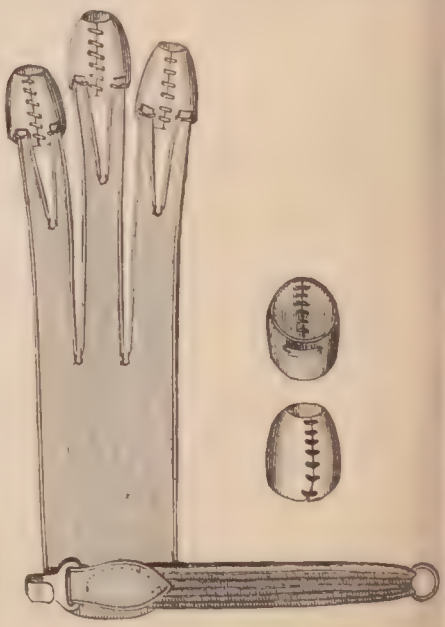


Fig. 6.—Glove and Tips.

for each finger, generally fastening l means of an india-rubber ring rou the finger—about the best of this ki

being those invented by Mr. Buchanan of Piccadilly. In the matter of the shooting-glove, however, it is best to leave the archer to choose for himself, merely cautioning him to make sure that whether glove or tips, they fit him well, or he will never be able to make a good loose. The cut (*fig.* 6) represents a glove and set of tips.

SCORING-CARDS.—These are made of various shapes and sizes to accommodate a single archer, or to serve for a match. About the best for private use consists of a circular piece of cardboard coloured like a target, divided into three segments for three distances, and having the other side printed to receive the score when reckoned. These are carried in little ivory frames made for the purpose, the whole being about the size of a watch. A small ivory pricker for marking is carried with it. The accompanying cut represents one of

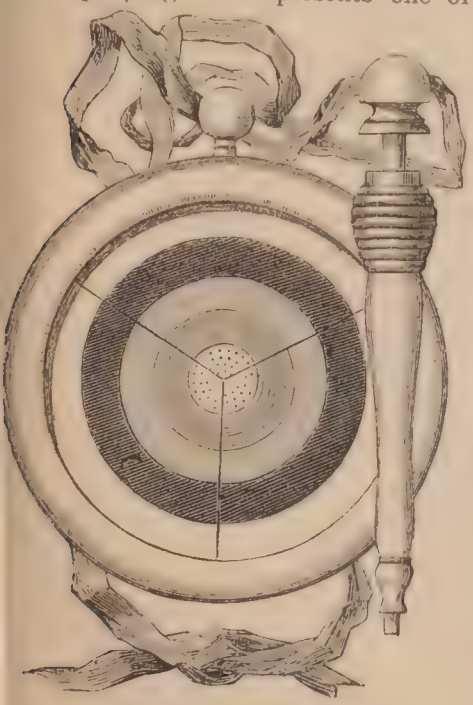


FIG. 7.—SCORING-CARD AND PRICKER.

hese cards. Perhaps, however, for rdinary practice, nothing is better an a common metallic memorandum-ook, ruled for the day of the month, nd vertically for the rings.

THE TARGET consists of a circular ick mat of straw covered with can-as, painted in a series of circles. It usually from three feet six inches to ur feet in diameter; the middle is about six or eight inches in diameter, gilt, and called "the gold;" the next is called "the red," after which comes "the inner white," then "the black," and finally "the outer white." These targets are mounted upon trian-

FIG. 8.—THE TARGET.

gular stands, at distances apart of from 50 to 100 yards; 60 being the usual shooting distance. (See *fig.* 8.)

SECT. 2.—THE USE OF THE BOW.

TO BEND AND STRING THE BOW properly, the following directions will be serviceable, and the young archer should pay particular attention to them, since a neglect of these cautions will often lead to a fracture of the bow, by bending it the wrong way:—

1.—Take the bow by the *handle* (*fig.* 1, D) in the *right* hand.

2.—Place the bottom end (B) upon the ground, resting against the hollow of the inside of the right foot, keeping the flat side of the bow (called the *back*) towards your person; the left foot should be advanced a little, and the right placed so that the bow cannot slip sideways.

3.—Place the heel of the left hand upon the upper limb of the bow, below the eye of the string. Now, while the fingers and thumb of the left hand slide this eye towards the notch in the horn, and the heel *pushes* the limb away from the body, the right hand *pulls* the handle towards the person, and thus resists the action of the left, by which the bow is bent, and at the same time the string is slipped into the "nock," as the notch is termed.

4. Take care to keep the three outer fingers free from the string, for if the bow should slip from the hand, and the string catch them, they will be severely pinched. If shooting in frosty weather, warm the bow before the fire, or by friction with a woollen cloth. If the

bow has been lying by for a long time, it should be well rubbed with boiled linseed oil before using it.

To Unstring the Bow, hold it as in stringing; than press down the upper limb exactly as before, and as if you wished to place the eye of the string in a higher notch; this will loosen the string and liberate the eye, when it must be lifted out of the nock by the forefinger, and suffered to slip down the limb.

Before Using the Bow, hold it in a perpendicular direction, with the string towards you, and see if the line of the string cuts the middle of the bow; if not, shift the eye and noose of the string to either side, so as to make the two lines coincide. This precaution prevents a very common cause of defective shooting, which is the result of an uneven string throwing the arrow on one side. After using it, unstring it; and if a large party is shooting, after every end it should be liberated from its state of tension; but in this respect there is a great difference in different bows, some good ones soon getting cast from their true shape, and others, though inferior bows, bearing any ordinary amount of tension without damage.

The General Management of the Bow should be on the principle that damp injures it, and that any loose floating ends interfere with its shooting. It should, therefore, be kept well varnished, and in a waterproof case, and it should be carefully dried after shooting in damp weather. If there are any ends hanging from the string, cut them off pretty close, and see that the whipping in the middle of the string is close and well fitting. The case should be hung up against a dry internal wall, not too near a fire.

In Selecting the Bow be careful that it is not too strong for your power, and that you can draw the arrow to its head without any trembling of the hand. If this cannot be done after a little practice, the bow should be changed for a weaker one, for no arrow will go true if it is discharged by a trembling hand.

In Selecting Arrows be careful that they are not too long. For a bow of 5 feet 10 inches, the arrows should be about 2 feet 4 inches in length. For a lady's bow of 4 feet 10 inches, the arrow should measure about 2 feet.

In Shooting keep the longer limb of the bow upwards, as the bow is liable to be broken if used the other way, and the wrapping of the string does not coincide with the upper part of the handle. Bows may be broken either from the above circumstance, or by overdrawing them, or by snapping the string without an arrow in it, or by the string breaking; and if a bow stands all these trials, it is to be prized as a sound and good bit of stuff.

After an arrow has been shot into the target or the ground, be particularly careful to withdraw it, by laying hold close to its head, and by twisting it round as it is withdrawn in the direction of its axis. Without this precaution it may be easily bent or broken.

In Shooting at the Target, the first thing to be done is to nock the arrow—that is, to place it properly on the string. In order to effect this, take the bow in the left hand, with the string towards you, the upper limb being towards the right. Hold it horizontally while you take the arrow by the middle, pass it on the *under* side of the string and the *upper* side of the bow, till the head reaches two or three inches past the left hand; hold it there with the forefinger or thumb while you remove the right hand down to the nock. Turn the arrow till the cock-feather comes uppermost; then pass it down the bow, and fix it on the nocking point of the string. In doing this, all contact with the feathers should be avoided, unless they are rubbed out of place when they may be smoothed down by passing them through the hand from the point towards the neck.

The Attitude for shooting should be graceful as well as serviceable. The body should be at right angles with the target, but the face must be turned over the left shoulder, so as to be opposed to it. The feet are to be flat on the ground, with the heels a little apart, the left foot turned towards the mark, the head and chest inclined a *little* forward, so as to present a full bust but not bent at all below the waist.

In Drawing the Bow, proceed thus:—

1*st Method.*—Take hold of the bow with the left hand, having the elbow straight: then, having placed the arrow as directed in the last paragraph, and having the finger-stalls or shooting glove on, put a finger on each side of the arrow on the string, and the thumb on the opposite side, so as to steady it; then raise all at the full length of the arm till the right hand reaches near

to the level of the shoulder, and the left is opposite the target, when, by drawing the one to the ear, and the other towards

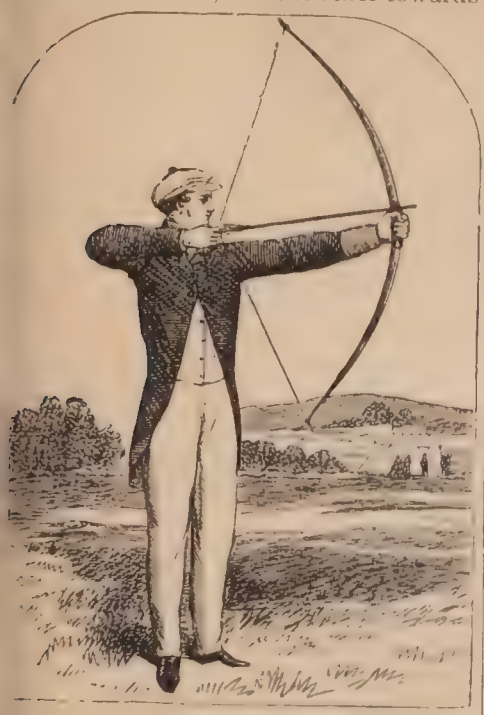


FIG. 9.—POSITION.

he target, the arrow is brought to a lirect line with the bull's-eye, and at hat moment it is released.

2nd Method.—Draw the arrow as be-ore, but pause when the arrow is fully xtended to the head, and take aim. This, however, requires a very strong rm, and also a strong bow, or there vill be a quivering of the muscles, which s communicated to the arrow; besides he danger of breaking the bow. The osing must be quick, and the string ust leave the fingers smartly and eadily, the bow-hand at that moment eing held as firm as a vice, upon hich the goodness of the flight mainly epends.

THE FOLLOWING DIRECTIONS should be tended to strictly, if good shooting is be attained :—

1.—Fix the attention steadily upon the ject, and disregard all external objects, hich are liable otherwise to distract the e at the moment of shooting.

2.—In drawing the bow, in order to cure the arrow in its place, turn the w a little obliquely, so that the ndle and your knuckles will together m a groove for the arrow to run in. hen it falls off, it is from the string being held too far up by the fingers, which causes it to twist in the drawing, and the arrow is thereby thrown off from resting against the bow. The proper length is midway between the ends and the first joints of the fingers. Three fingers may be used, but the arrow should be between the first and second.

3.—In taking aim, two points must be attended to — viz., the LATERAL *direction* and the *distance*, because there is no bow which will drive an arrow many yards perfectly *point blank*, and consequently, a slight elevation must in all cases be made, and for long distances, with weak bows, a very considerable one. It requires great experience to manage the elevation properly, and much must depend upon the exact strength of the bow, and the distance to be shot. With regard to the lateral direction, it is materially affected by the wind, and this must always be allowed for if there is any stirring; and if it is in the line of the targets, one end will require much less elevation than the other.

4.—Fix the eyes on the mark, and not on the arrow. Avoid all such expedients as putting a mark on the glove to aim by. Do not look from the mark to the arrow and back again. The proper plan is to keep both eyes open, and look steadily at the mark, while with the hands the bow is raised or lowering in accordance with what the *mind thinks* is the proper direction.

5.—If an arrow falls off the string, and the archer can reach it with his bow, it is not shot; but if he cannot, it must be counted as such.

SECT. 3.—TARGET-SHOOTING.

THE TARGETS are fixed exactly opposite each other, at 60 yards, or perhaps more, apart. The stands, when properly placed, are each called "an end." The proper number of arrows, as fixed by the rules, are then shot from each end by all the party assembled, when all proceed to pick up or extract their arrows, the marker scoring for each before drawing them from the target, after which the party shoot back again to the other end, and so on until the whole number of ends have been shot.

Other kinds of shooting are butt, roving, flight, clout, and cross-bow, but

these methods are now so little practised, that it is scarcely necessary to treat of them.

Sect. 4.—Rules for an Archery Club.

[*The Rules for the formation and interior management of the Club must be left to be compiled according to circumstances.*]

FIELD REGULATIONS.

1.—There shall be — prize meetings during the season.

2.—Shooting to commence each day at —— o'clock, and to continue until dinner at —— o'clock, after which, shooting to recommence and continue until all arrows are shot.

3.—There shall be four prizes for ladies, and four for gentlemen, viz.: for the largest gross score, for the greatest number of hits, for the best gold, and for the greatest number of golds.

4.—The distances for ladies shall be sixty yards and fifty yards; and for gentlemen one hundred yards, eighty yards, and sixty yards.

5.—The national round shall always be shot, viz.: for ladies, forty-eight at sixty yards, and twenty-four at fifty yards; and for gentlemen, seventy-two at one hundred yards, forty-eight at eighty yards, and twenty-four at sixty yards. (*Or the St. George's round of three dozen at each distance, may be used.*)

6.—The order of shooting to be as the names are entered on the target-list, and anyone not ready in his turn shall shoot last.

7.—No one shall shoot out of his turn.

8.—No arrow to be withdrawn from the target, until scored by the captain, under pain of losing its value.

9.—No talking to be allowed at the ends during the shooting, and only the members shooting to stand in front of the target, the remainder standing behind on the left.

10.—Holders of prizes for gross score or hits to be weighted as follows:—Holders of one prize to lose the white ring; of two, the white and black; of three, the white, black, and blue.

11.—None but members to receive the members' prizes.

12.—All arrows to be clearly marked with coloured rings, and to be entered as so marked in the books of the society; any member neglecting to conform to this rule will forfeit any score made with improperly marked arrows.

13.—All members intending to shoot shall appear in the uniform of the club, under the penalty of a fine of —— for each omission.

Sect. 5.—Dress.

The usual Dress for Ladies peculiar to archery is shown in the annexed sketch (*fig.* 10), which also gives ex-

Fig. 10.—Ladies Costume.

tremely well the attitude in ladies shooting. In most cases a green jacket is worn over white; sometimes, however, the colour is black.

The gentlemen's costume is not generally fixed in archery clubs, but sometimes a green suit is the club uniform.

Sect. 6.—Expenses.

The expenses of archery are not usually great, though a good many arrows will be lost or spoiled during the season's shooting, especially if the grass is not kept mown very close. Bows and all the other paraphernalia last a long while; and, with the exception of the arrows, the first cost may be considered to be the only one over and above the subscription to the club, to which most archers like to belong, competition being the essence of the sport.

The following are about the usual charges which are made for bows

arrows, &c.; but they vary a good deal with the different makers.

	£	s.	d.		£	s.	d.
Gentleman's bow .	2	2	0	to	9	9	0
Lady's bow . .	1	1	0		3	3	0
Arrows (each) . .	0	1	6		0	3	0

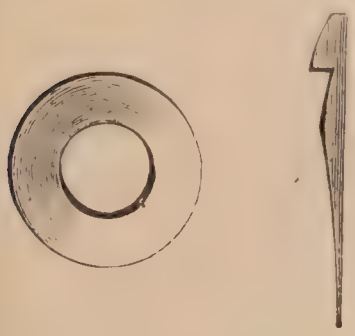
	£	s.	d.
Quiver, brace, glove, &c., about	1	1	0
Targets (per pair)	1	11	6
Stands (per pair)	1	1	0

CHAPTER II.

QUOITS AND SKITTLES.

SECT. 1.—QUOITS.

QUOITS is a game requiring great strength in the arms and shoulders, and quickness of sight. It is played with a flattened ring of iron called a quoit, thick at its inner, and thin at its outer edge, and with a pin of iron driven into the ground, called a "hob."



QUOIT AND HOB.

The quoits are light or heavy, according to the strength of the player; and in playing a match it is usual to specify the weights.

THE GAME is played by driving two hobs into the ground 19 yards apart; but the distance is frequently altered by agreement to distances varying from 15 to 30 yards. The players are either two or more; but if more than three, they are generally arranged in sides in the usual way. The method hitherto most generally adopted is as follows:—Each player has two quoits, and throws one of them in his turn, with the view to its falling over the hob; after all have thrown one round, each throws a second, and then all throw back again to the other hob. It will be seen, however, by the most recent rules, that each player is to play both quoits in succession. The quoit is held with the forefinger along its outer edge, in which there is a small dent for the end of the finger to lie in without cutting it. The two surfaces are held between the thumb and the other fingers, and the quoit is pitched flat, with a slight rotary motion to make it pass smoothly and horizontally through the air. The score depends upon the quoit falling on the pin, or upon the distance from it. Thus—a "ringer" (*i.e.* a quoit which surrounds the pin) scores two, and two ringers count four. If a player has placed both his quoits nearer to the hob than his antagonist, he scores two; if he has but one nearer, he scores one; and when the nearest quoits are equidistant and belong to different players, neither player scores.

RULES.—The following rules were agreed to at a conference at Birmingham in 1869:—

1. That the distance from pin to pin shall be 19 yards, and that the player shall stand level with the pin, and deliver his quoit with the first step.

2. That no quoit be allowed which measures more than eight inches external diameter, and that the weight may be unlimited.

3. That the pins be one inch above the clay.

4. That all measurements shall be taken from any visible part of the pin to the nearest visible part of the quoit; no clay or quoit to be disturbed.

5. That no quoit shall count unless fairly delivered in the clay free from the outer rim, and that no quoit on its back shall count unless it holds clay or is knocked out by another quoit. That no quoit rolling on the clay shall count unless it first strikes another quoit or the pin.

6. That each player shall deliver his quoits in succession, his opponent then following.

7. That an umpire shall be appointed, and in all cases of dispute his decision shall be final.

Sect. 2.—Skittles.

Under this heading may be included the various games of Skittles, Four Corners, Knockemdowns, and American Bowls, the object in each being to knock down, or, technically speaking, to "floor," the greatest number of pins in the least possible number of throws. It is to be regretted that these good old-fashioned English games should (as far as London is concerned, at all events) be confined chiefly to the lower classes, and that a skittle-player is generally considered to be everything that is bad; for although it may not be a very intellectual pastime, there can be no doubt of its being a healthy recreation, one requiring a certain amount of skill and endurance, and particularly adapted to those who follow sedentary employments.

In Skittles, nine pins are used (placed on a wooden frame, as shown in the accompanying diagram) and a "cheese" ball, weighing generally from eight to

SKITTLES.

fourteen and sometimes even sixteen pounds; the player delivering the ball from a distance of about twenty-one feet. In playing the ordinary "stand-fair" game, only one step is allowed to be taken whilst delivering the ball; but the "trotting" game is very frequently played, in which two or three steps are permitted, and in some instances the objectionable practice of "running up" is carried on to such an extent that the ball is hardly out of the hand before it touches the front pin. This ought always to be discountenanced, as even the weakest player must surely be able to deliver the ball on the third step. Whilst throwing, care should be taken to get a good firm grasp of the ball, which should be held in a slightly slanting position, and to strike the front pin on the shoulder, sufficient impetus being given to enable the ball to reach the back pin if possible.

A good player will sometimes hit five pins with the ball, in which case he generally gets the whole nine. A tyro at the game may always think himself fortunate if he secure the entire number in three throws, and a man who can rely on getting them in twice may be considered a good, sound player. Some of the best players have been known to knock down and set up a hundred or even more full frames within the hour. One of the most extraordinary performances of this kind on record is that of J. Sullivan, who, at the Horse and Groom, Newington Butts, on Feb. 22, 1822, succeeded in knocking down and setting up 110 full frames in 57 min. 57 sec., he being at the time only nineteen years of age. Ben Sexton is also credited with flooring 830 pins in 100 throws, on May 12, 1865, at Leinton, Suffolk; likewise with some wonderful performances with a man standing in the frame. Of course, however, feats of this class are not to be met with among amateur players, but rather with those who make a business of the game. The number of chalks is generally two or three; this is, however, optional with the competitors. In fact, there is so much difference in the way the game is played in different localities, that the rules appended can scarcely be taken as absolute.

In Four Corners the pins (four in number) are much larger, and in the strict game a proviso is sometimes insisted on—viz., that the back pin must be hit with the ball.

In Knockemdowns and Bowls ten pins are used, the centre one being called the king, and the ball has to be grounded before it reaches the frame.

Rules.—The following are the best obtainable rules:—

1. That all pins be knocked down, but should one remain standing it shall be considered an extra "go."

2. That if a pin be hit off the frame and still stands up, it shall be considered "down," but if any part of the pin touch the frame it shall be an "up" pin.

3. That should the ball rebound from the sides or back of the ground and knock down a pin, it shall be considered foul, and must be set up

again. If a pin, however, be hit by the play of the ball, it shall be considered fair.

4. That if a pin falls and rests upon two pins (or ball and pin), it shall be considered "down," but if resting on one pin only, as an "up" pin.

5. That all wood lying behind the centre corners of the frame, if no part lie over the frame, may be removed at the option of either of the players.

6. That the number of goes be limited to five.

7. That all ties be decided by the first throw.

CHAPTER III.

CURLING.

SECT. 1.—GENERAL REMARKS.

CURLING, which is by far the most interesting and exhilarating of Scotia's games, appears to be of very considerable antiquity. In a book published in Perth about 1600, entitled the "Muses' Threnodie," giving an inventory of a deceased gentleman's effects, the following lines appear—

> "His hats, his hoods, his bells, his bones,
> His alley bowls, his CURLING STONES."

About the year 1840, a great and very important change took place in curling, which gave a wonderful impetus to the game, not only in Scotland, but in Canada, &c. Previous to this time almost every club (or parish) had rules peculiar to itself, and when neighbouring clubs or parishes met to play a bonspiel or match, the rules to be observed during the game formed a subject of some difficulty, and often of very great contention. To obviate this, a meeting took place in Edinburgh, about 1840, at which many keen curlers attended, from different districts of the country. At this meeting the Grand Caledonian Curling Club was formed, which issued a set of rules, by which the game was to be regulated by every affiliated club. The curling stones also at this time underwent a great change: formerly a coarse stone or boulder from the field or a dyke, with a smooth bottom, was reckoned quite sufficient; into the top of which was fixed an immovable coarse iron handle. Indeed, curling stones originally had no handles, but were pushed along the rink with the hand. Now, however, these stones are of a certain diameter and thickness, most beautifully polished, with elegantly mounted handles, which can be screwed into the stone, unscrewed, and taken home in the pocket; no stone is allowed beyond 50lb. In 1842, Prince Albert became the patron of the club; in 1843, Her Majesty graciously allowed it to take the designation of "Royal." Curling is the most friendly and social of all the games ever invented for the amusement of the human race; the poorest mechanics or peasants, provided they are keen and good curlers, are most cordially received, and associated with dukes, earls, lords, and baronets, on the icy board. As an illustration, we may refer to the great match or bonspiel, in 1784, between the Duke of Hamilton (Lanarkshire), and Macdougall of Castle Semple (Renfrewshire), seven players on each side; the noble duke, in selecting his men, fixed upon Tam Pate, the cadger, whose business ordinarily was to hawk haddocks and herrings through the country. The duke (himself a player) appointed Tam skip or head of the rink; the game was so keenly contested, that before the last stone was played both sides were equal; that stone had to be played by Tam Pate. No one thought that it was possible to take it; but Tam, with the greatest coolness and unerring precision, took that shot, and thus gained the victory for the Duke of Hamilton.

The number of members belonging to the Royal Club (*mirabile dictu!*) amounts to about 12,000. On the pond belonging to the club, situated near Blackford, Perthshire, when a great bonspiel or match is played between the south and the north of Scotland, there has been seen 2000 curlers, and 5000 lady and gentleman spectators—the pond is seventy acres in extent. Curling is much practised in Canada, where there is fine ice all the winter.

SECT. 2.—RULES OF CURLING.

1. The length of the rink shall be forty-two yards; any deviation occasioned by peculiar circumstances to be by mutual agreement of parties. When a game is begun, the rink is not to be lengthened nor shortened, unless by consent of the majority of players.

[It is advisable that rinks have double tees at each end, the one at least two yards behind the other, the whole four to be as nearly as possible in the same line. The stones are to be delivered from the outer tee, and played towards the inner; this saves the ice from injury around the tee played up to.]

2. The rink shall be changed in all cases when, from the springing of water, the majority of players cannot make up. Neither the winning nor losing party have right to object, as all contests must be decided on the fair and equitable principle of science, not of strength.

3. The number of shots in a game, if not otherwise mutually fixed upon, shall be twenty-one.

[A game more frequently consists of thirteen shots, or even of seven, than of any others, when an hour or two's practice is only intended; but this is a matter of private arrangement.

In a bonspiel or match, when a considerable number of players appear on each side, the aggregate number of shots gained in a fixed time is not only as equitable a method, but affords amusement to all the rink to the end, and ought to be universally adopted.]

4. The hog's score to be one-sixth part of the length of the ring from the *tee*. Every stone to be considered a hog which does not clear a square placed upon the score.

5. Every rink to be composed of four players a side, each with two stones, *unless otherwise mutually agreed upon*. In no case shall the same individual or party play two stones in succession, and every player shall deliver both his stones alternately with an opponent, before any other of the same side or party play one.

6. Parties to draw cuts which shall fill the ice at the first end; after which the winning party of the last end or game of that day's play shall do so. *No stone to be counted which does not lie within seven feet from the tee*, unless it be previously otherwise mutually agreed upon. In cases where each party has a stone equally near the tee, neither to be counted, and the winning party of the previous end is again to fill the ice. Measurements to be taken from the centre of the tee to that part of the stone which is nearest it.

7. Each player to place his feet in such a manner as that, in delivering his stone, he shall bring it over the tee. A player stepping aside to take a brittle (or wick), or other shot, shall forfeit his stone for that end. A player, after delivering his last stone, shall not remain longer than to see his next opponent fit his tee, but shall take his place at the other end, between the score and the previous player of his own party; and shall on no account remain to give directions to the next of his party who plays.

8. If any player shall improperly speak to or interrupt another while in the act of delivering his stone, one shot shall be added to the score of the party so interrupted.

9. The rotation of play adopted at the beginning must be observed through the whole game.

10. All curling stones shall be of a circular shape. No stone must be changed throughout the game, unless it happens to be broken, and then the largest fragment to count, without any necessity of playing with it more. If a stone rolls and stops upon its side or top, it shall not be counted, but put off the ice. Should the handle quit the stone in the delivery, the player must keep hold of it, otherwise he will not be entitled to replay the shot.

11. If a player plays out of turn, the stone so played may be stopped in its progress, and returned to the player. If the mistake shall not be discovered till the stone is again at rest, the opposite party shall have the option to add one to their score, and the game proceed in its original rotation, or to declare the end null and void.

12. In double-soled stones, the side commenced with shall not, under forfeit of the match, be changed during the progress of the game.

13. The sweeping department to be under the exclusive control of the skipper. No sweeping to be allowed by any party till the stone has passed the hog's score, except when snow is falling or drifting, in which case it shall be admissible to sweep from tee to tee. The player's party may sweep

when the stone has passed the further hog's score, his adversaries when it has passed the tee. Sweeping to be always to one side. Previous to each direction being given, either party are entitled to sweep the rink clean.

14. Parties before beginning to play to take different sides of the rink, which they are to keep throughout the game; and no player on any pretence to cross or go upon the middle of the rink. The skippers alone to stand about the tee. Their respective parties, according to their rotation of play, shall take their position down to the hog's score.

15. If, in sweeping or otherwise, a running stone be marred by any of the party to which it belongs, it shall be put off the ice. If by any of the adverse party, it shall be placed where the skipper of the party to whom it belongs shall direct. If marred by any other means, the player shall take his shot again. Should a stone at rest be accidentally displaced at any part of the end before the case provided for in Rule 13 comes into operation, it shall be put as nearly as possible in its former position.

16. Every player to come provided with a besom, to be ready to play when his turn comes, and not to take more than a reasonable time to throw his stones. Should he accidentally play a wrong stone, any of the players may stop it while running; but if not stopped till it is again at rest, it shall be replaced by the one which he ought to have played.

17. No measuring of shots allowable previous to the termination of the end. Disputed shots to be determined by the skippers; or, if they disagree, by some neutral person mutually chosen by them, whose decision shall be final.

18. Should any played stone be displaced, before the last stone is thrown and at rest, by any of the party who are lying the shot, they shall forfeit the end; if by any of the losing party who have the stone yet to play, they shall be prevented from playing that stone, and have one point deducted from their score. The number of shots to be marked by the winners to be decided by the majority of the players, the offender not having a vote.

19. The skippers shall have the exclusive regulation and direction of the game, and may play in what part of it they please; but having chosen their place at the beginning, they must retain it till the end of the game. The players may give their advice, but cannot control their director; nor are they upon any pretext to address themselves to the person about to play. Each skipper, when his own play comes, shall name one of his party to take charge for him. Every player to follow implicitly the direction given him.

20. Should any question arise, the determination of which is not provided for by the words and spirit of the rules now established, it may be referred to the three nearest members of the representative committee, unconnected with the disputing parties, who shall form a district committee of reference, and whose decision shall be binding on all concerned till the annual general meeting of the representative committee, to whom either party may appeal.

Sect. 3.—Technical Terms.

The following are the chief technical terms used in curling:—

Rink—The piece of ice used by two sets of players; a good sized lake may contain many rinks.

Hog—A score made across the ice one-sixth part of the rink from the tee.

Tee—The point at each end of the rink to be played for.

Brough—Several concentric circles, varying from one to fourteen feet in diameter, drawn round each tee.

Howe Ice—When it is desirable that a stone should be driven straight up the centre, the skipper requests the player to keep "howe ice."

Inwick—Another name for an angle or cannon taken *inwards* to the tee, by one stone against another.

Guard—A stone is said to guard when it lies in a line between the player and the tee, with another stone *within* it; a guard may also lie on any other part of the ice beyond the hog score, on a similar principle.

Soled.—When a stone is neatly and levelly delivered from the hand along the ice, it is said to be well "soled."

Crampets or *cramps*—An apparatus shod with steel spikes, worn on the feet, or attached to the ice at each end, to prevent slipping.

Skipper—The title given to the director of the play on each side.

ENTERING THE WATER.

PART III.

RURAL GAMES AND OUT-DOOR AMUSEMENTS.

BOOK III.—ARTIFICIAL MODES OF LOCOMOTION.

CHAP. I.

SWIMMING.

Sect. 1.—General Remarks.

The acquirement of a knowledge of the art of swimming has been admitted by all to be of the greatest importance. This mode of locomotion is, next to walking, the most primitive and simple, being employed by nearly all savage nations, who are generally adepts in its practice. It is an imitative art, easily learned, and probably first attained by observing the movements of those animals to whom it is natural. Still it is an acquired, and not a natural power in man, and the child of the savage must learn it no less than the denizen of the civilized world. The dog and the horse, on falling into the water, are, as a rule, able to swim, though they are sometimes awkward at first; and I know of one instance, in which a dog would most assuredly have been drowned had he been left to his own resources. Man, on the other hand, on entering the water for the first time would as invariably drown. The question has often been asked, "Why cannot man swim at the first attempt?" The answer is a threefold one:—1st, because quadrupeds are proportionately lighter than man; 2nd, because it so happens, that the necessary movements quadrupeds must make in the water are precisely the same as those they have been accustomed to on land; 3rd, because of the difference of the relative position of the centre of gravity in quadrupeds and in man. It has been held that if a person were to retain in the water the posture and action to which he is accustomed on land, he too would be able to swim at once. I cannot advise any one to believe such a statement, for it always happens that if a person who is unable to swim accidently falls into a deep river, he is sure to struggle violently, and throw his head and shoulders so high out of the water that his body does not displace so much of it as is equal to its weight, and he sinks faster than ever. The individual placed in such a position must sink, or try to swim.

In this country, surrounded as it is by water, and abounding in beautiful rivers and lakes, and where there are swimming baths in abundance (albeit indifferent ones), there is no reason why the art of swimming should not be acquired by every person who has health and strength. Ladies should also be taught, and many lives would be saved thereby; but up to the present time we have been sadly neglectful with respect to taking steps in order that females may learn so useful an exercise. The assistance of a teacher or friend is desirable in every case, in order to accomplish the preliminary steps, and besides, a knowledge of the art can be much more readily acquired; for with an experienced teacher, the pupil may learn it

in a fortnight or three weeks. Theory alone is of very little service to the beginner, for a person is rarely met with who has properly mastered the art without the aid of a tutor to initiate him in the proper movement and use of the hands and legs. Many persons, no doubt, have learnt to swim unaided, by simply watching the actions of accomplished swimmers, and afterwards persistently endeavouring to imitate them, but it is a long and tedious process, and those who are self-taught hardly ever rise above mediocrity. Swimming, to be of any great service, should be well mastered; and it is a mistake to suppose that because a man can swim a hundred yards with perhaps little difficulty, he could double the distance in case of necessity. The human body contracts with the loss of heat. Its specific gravity is increased, and consequently its buoyancy is lessened, and with this reduction of heat there is a corresponding decrease of muscular power. A liberal allowance for these disadvantages should be made by any one attempting to go beyond his regular distance in deep water, or his rashness may prove fatal. Confidence is a valuable adjunct to bathing, and it is advisable to become experimentally familiar with the fact that water is quite capable of supporting the weight of the human body. The easiest way of arriving at this conclusion is to select a gradually shelving sandy beach on a calm day. Walk out to a depth of about three feet, then stoop and take up a handful of sand; repeat this several times as you proceed farther and farther into the water, until it has reached the chin, and you will find that it is not easily to be accomplished. The natural conclusion, therefore, is that but little exertion will be required to keep up the body. The best place to learn without a teacher is a bath, for not only is it the safest, there being always assistance at hand, but it is preferable in other ways. A great deal may be accomplished by oneself, by standing on the ladder used in almost all baths, and striking off on the surface of the water from the second or third step from the bottom, continuing to strike out slowly and decisively with the hands until the feet sink. Walk back and repeat the practice, and if persevered in, success will soon be the reward. A learner should never mind his head being under water; by degrees he will gain confidence, and become accustomed to the immersion. When the mere fact of keeping the body afloat has been mastered, the continuance of daily practice should be persevered in until perfection has been attained; but the beginner should on no account attempt to perform any feat until the proper action of the hands and legs has been thoroughly acquired. A great defect as regards "style" among the swimmers of the present day arises from the fact that, for the most part, as "soon as they learn to walk they want to run;" or, in other words, immediately they are able to swim they essay the side-stroke, and the result is, that they are seldom able to do either properly.

ALL ARTIFICIAL AIDS in learning to swim are to be avoided. Many persons ask if corks, air belts, cork jackets, bladders, &c., are serviceable. Experience has taught me that there are great dangers attending on these inventions. It is more difficult to discontinue their use than to learn to swim without them, for their effect is to keep the body above the natural plane of flotation, and the more confirmed the habit becomes of swimming high in the water, the greater is the difficulty of accommodating the body to its natural level. Again, cork and air belts occasionally give way from defective fastenings, and slip down from the chest to the legs, thereby causing the submersion of the head; and it is scarcely possible for any one unable to swim to extricate himself when in this position. A swimming master is, as already stated, the most ready and most effectual means of acquiring a knowledge of the art.

SECT. 2.—MODES OF SWIMMING.

BREAST SWIMMING.—All teachers are agreed that in learning to swim, no method can be adopted that is so simple or so beneficial as that which is termed the old-fashioned style of swimming upon the breast. It forms the groundwork of every other department of the art; when once a fair breast-stroke has been learnt, the pupil may try other styles, but he should not attempt the side-stroke until he has fairly mastered this preliminary step, for it is of the

greatest importance, if the swimmer has any desire to excel in this beautiful exercise, that its simplest elements should be carefully and properly acquired; it bears the same analogy to the swimmer as learning to row in a tub-boat does to the disciple of the oar. The fact of being able to keep afloat once acomplished, perhaps the following hints may be of service to the pupil. On taking the dive and rising to the surface, the stroke should be commenced by placing the hands, with the backs upwards, slightly curved, the wrists touching the chest, and no lower in the water than four inches; they should then be pushed rapidly forward to the fullest extent of reach; the palms of the hands, with *closed* fingers, are then to be turned outwards and brought back steadily and decisively at right angles with the body with all the power at command; during this part of the stroke the arms should not be relaxed in the slightest degree. Simultaneously with this movement the knees should be brought up sideways with a joint action, striking the feet out sharply, and as widely as possible, closing them afterwards while the arms are preparing for the next stroke. A great fault with most beginners is that they take the strokes quicker with their arms than with their legs, and consequently there is no uniformity of action. This is a direct hindrance to progress, and should be particularly avoided. In this style of swimming the legs are the principal motive power, and any contrary movement with the hands must be a great drawback, and also very exhaustive. The strokes should be taken quietly, and as long as possible without any apparent effort. Great speed is seldom attained by breast swimming, the difference in the rate of progress on the side is almost double. Coulter, who is supposed to swim in the former way, is very fast, but his can scarcely be called a fair breast stroke. I have seen others go pretty quickly, but it is of very rare occurrence.

Swimming on the Back.—After learning properly on the breast, swimming on the back should next be studied, and will be found of very great service in going a long distance; it affords an opportunity for resting the arms, and when returning to the breast again the swimmer finds himself much invigorated. It is very easily accomplished afte the first-named method is well known, and may be taught in one lesson, it be ng merely to turn on the back,and, with the eyes looking upwards, the hands down at the side, and the knees well apart, strike out vigorously with the feet, for, as before stated, upon these two actions all the evolutions of the practised swimmer are founded, and when perfection in them is attained by constant practice, nothing can prevent the pupil from becoming an expert in any branch of the art.

The Side-stroke.—The pupil having become *au fait* in the preliminary departments of swimming, may now begin to turn his attention to what is termed the side-stroke, as this method will enable him to get through the water at a much greater speed than he has yet attained. As a means of saving life speed is very desirable; it is certainly a criterion of skill; it also induces a healthy state of the body, for I know of no sport where "condition" is more essential to the success of the competitor than in swimming. It tries every muscle; and none but those who are sound in wind and limb could accomplish a thousand yards in still water under seventeen minutes. The style is now almost universal, and is generally acknowledged the best, for almost everyone who has learnt to swim very soon adopts it. It was introduced, if I mistake not, by Pewtress, who was well known about five-and-twenty years since as an accomplished and rapid swimmer, and it is questionable whether the speed he attained has ever been equalled. Since his day, however, more attention has been paid to the accurate timing of races, and we give in Sect. 6 an account of the fastest times on record. A good average side-swimmer goes at the rate of a yard in a second, but there are some who can easily compass forty yards in thirty seconds.

The stroke appears at first rather peculiar. The body is placed sideways, the lower extremities nearer the surface of the water than in the ordinary mode of swimming. If on the right side, the right arm is thrown out boldly in front, the body springing to the stroke by the impetus given by the action of the legs, the left hand being worked at the side as a paddle to enable the swimmer to keep a straight course: the hand should form a scoop; the right arm is kept perfectly straight, not

contracted, as in breast swimming, and is brought down deeply in the water with all the power at command; that hand is then brought up level with the chin, and pushed forward again to renew the stroke. The action of the legs should be long and vigorous, crossing each other, and working in unison with the arms and shoulders. If swimming on the left side, it is the same thing, *mutatis mutandis*. This style requires much practice, but it has manifold advantages when properly acquired. Great carelessness prevails among side swimmers in not keeping a straight course. There are two causes for this divergence:—First, the improper use of the left hand (if swimming on the right side), which should act as a rudder; whereas some throw out that hand and arm as in breast swimming, and the effect is nearly the same as rowing in a boat with one oar only. Secondly, the mischief is caused by attempting what is called the "Gardner stroke," the same hand being the offender. The consequence is that, especially in bath races, the amount of fouling is something surprising, and would not be tolerated for one moment in any other sport.

SWIMMING BACKWARDS.—This is not a very difficult feat, but it is a great tax upon the muscular powers if kept up for any time. The swimmer lies upon his stomach, the arms straight out before him, and used on the principle of "sculling" a ship's boat. The feet and legs from the knees are worked up and down with a gentle action. Another method is by pushing the water away from the chin with the hands.

VARIOUS OTHER MODES of progression in the water are practised, in addition to those of diving and swimming under water, which are described in the next section.

The upright or Italian style, invented by Bernardi, is performed something in the same manner as walking; but as the progress made in this way is exceedingly slow, it is practically useless, except perhaps as a mode of husbanding one's strength. The dog-like style is very seldom resorted to by swimmers in these days on account of its slowness. Each hand and foot is used alternately, just as a dog uses his feet—hence its name. Swimming after the manner of the North American Indians is performed by a stroke first on one side then on the other, and has been termed "waltzing" by Beckwith, who carries it out to perfection.

There are many other somewhat easy modes of progression, such as swimming with one hand out of the water, without the use of either hand; on the breast, with both hands behind the back; with one hand before and the other behind the body; on the breast, with one foot out of water; on the back, with one foot out of water; on the breast, with both feet out of water, holding one foot; the "steamer," wrestling, and many other feats more or less difficult, which space will not permit of my describing in full, but some of which are noticed under the head of "Tricks in the Water," in Sect. 5.

SECT. 3.—DIVING, SWIMMING UNDER WATER, &c.

IN DIVING there are two things necessary in order to achieve success: first, to keep under the water, which is not so easily accomplished (although I have known persons who could compass a considerable distance in this way, who were unable to take two strokes upon the surface); secondly, holding the breath.

TO SWIM UNDER WATER requires some practice, and care should be taken that the feet do not appear, for whenever this happens, the whole body very quickly follows. The speed is much greater when the body is well submerged, and I once knew a very swift swimmer, who could have given his opponent a start of 20 feet in 100, beaten by almost that distance, owing to the other keeping under all the time. The second part of the feat is merely a question of condition, but I cannot recommend diving as beneficial to health; and on one occasion, several years ago, I saw a noted under-water swimmer completely prostrated after a performance of this kind.

PLUNGING.—This is one of the most graceful feats that can be accomplished by a swimmer. It denotes both strength and science, and when done properly is a sight worth seeing. It is an accomplishment that is not very much practised, and as a rule there are very few who take the water properly or make a clean plunge. Indeed, most persons seem to fall into the water, or make no effort to reach a distance,

their bodies entering more in the shape of a ball, instead of being straight out like an arrow. To make a good plunge, the height of the board from which it is taken should be about three feet from the surface. The feet and legs should be kept close together, and the body perfectly upright. All the muscles should be at their utmost tension for one great effort; the arms should be swung to and fro at the sides about twice, the body bent, but not the legs, towards the water, and the plunge made with the arms and hands straight out in front, using all the force at command with the feet against the board or stones from which the plunge is taken, entering the water deeply, and without a splash. I have seen some excellent plunges made by the members of the Ilex Swimming Club: Mr. Harvey accomplished 55 feet, Mr. Iles 50 feet, and Mr. Young in 1870 exceeded Mr. Harvey's plunge by a foot. The greatest expert in this particular I ever knew was named Drake, who may be remembered for his rapid and beautiful plunging, some five and twenty years since, at Holborn Baths. He could compass about 53 feet with the greatest ease. He was a very heavy man, and as a rule stout persons are the best for this feat. I have never seen it done so well or so rapidly since. Swiftness is one of its greatest merits, for when performed slowly it becomes tedious, and loses all interest.

In plunging from a height the body should be inclined towards the water, the arms being extended beyond the head, and the hands kept close together. As soon as the swimmer loses his balance he should at once spring forward and straighten his body from the fingers to the toes, when he will enter the water hands first and noiselessly. Care should be taken not to throw the heels up, or it becomes a matter of uncertainty which part of the body will touch the water first. A good swimmer may always be known from the way in which he takes the water. Plunging from a great height is a very dangerous feat to attempt; it is accomplished very cleverly by some swimmers, but several have lost their lives in the rash attempt. The proper method of gaining excellence in this department of the art is by increasing the height from which the dive is taken by degrees, say a foot at a time. I once saw a young man plunge from a height of 30 feet into water only three feet deep; and it is said that an American diver was in the habit of plunging from a height of 160 feet, but he did it once too often, for it caused his death. Some persons have asserted that the eyes should be kept open when entering the water, but instinctively the eyes close just at that moment, which is as it should be; if they were kept open, the force with which the pupils would strike the water is likely to cause great injury to so delicate an organ, more especially when made from a great height. The eyes should be opened when underneath, as it is highly dangerous to swim without knowing where one is going to.

Running Headers.—This feat is accomplished by running ten or twelve yards before springing into the water, the steps being so timed as to make the spring with the last one, the swimmer endeavouring to clear as great a distance as possible before reaching the water. Strength of the extensor muscles and lightness of body are the main requisites for the successful accomplishment of this feat. Running headers are little known where there are no rivers or places from which a run and a plunge from a height can be made. At Eton and Cambridge it forms part of the swimming programmes, and they have mounds of earth constructed for the purpose of taking the header.

Sect. 4.—Modes of Supporting the Body without Progression.

Floating is understood by swimmers to mean lying motionless on the surface of the water. When floating, the body has to contend with two equal and opposing forces: its weight, which presses it downwards; and the resistance of the water, which forces it upwards. The easiest position in which to float is the first to be learnt, and consists in lying upon the back, which should be slightly curved upwards, the arms stretched out beyond the head, the feet and legs hanging down from the knees, without making any effort to support them. With little practice this may easily be accomplished, and although at first the head may sink a little, if the practitioner remains perfectly motionless he will find that his

face will again appear. The greatest difficulty is to keep the legs up; but this will be overcome by perseverance. From this first position all other floating feats spring, of which the principal are horizontal and perpendicular floating, the crucifix, &c.

TREADING WATER.—This is done in deep water, and the easiest way of accomplishing it is by extending and raising each leg as if walking up stairs. It is very serviceable in the case of a person who has fallen out of a boat with heavy clothing on, as it is the best position for taking off a coat, &c. Undressing in the water is a feat performed principally by professionals, who, however, generally float while taking them off.

SECT. 5.—TRICKS IN THE WATER.

THE MILL, OR CATHERINE WHEEL, is performed as follows:—The swimmer lies on his back, with his knees up to his chin; then, while one hand is kept close to the hip, and paddling so as to sustain the body, the other is used with considerable sweeps, and thus rotates the body on its centre.

IN HEAD-OVER-HEELS, the body is bent at the hips, the hands are straightened along the side, and are then used as if throwing the water over the back. This drives the head under, while the feet are used as in swimming, and a complete revolution is effected.

IN HEELS-OVER-HEAD, the swimmer, lying on his back, draws his legs up with a straight knee, and then, by sharply paddling with his hands, the feet are brought over the head, and overbalancing it, effect a revolution.

IN THE DOUBLE WHEEL, two swimmers interlace their feet and knees, and then, keeping their bodies apart, they each use their right hands with power, and their left as sustaining paddles, revolving in a large circle.

LEAP-FROG is practised by one treading water and the other swimming up to him, and then, laying both hands on his head, a shove downwards is given, and the swimmer passes on, and treading water himself, offers the same "back" as had previously been given to him.

HANDS AND FEET TIED.—This is a feat generally performed by professionals at their entertainments. Harold Kenworthy, an accomplished teacher of natation, did it in a way that I have never known attempted by any one else. His hands were tied behind his back, while all others have theirs fastened in front. This makes a considerable difference in the performance, and adds greatly to its difficulty.

There are many other feats which are performed in the water, but the above are those principally adopted by good swimmers. Racing, and diving for objects thrown into the water, are very common amusements, but they are apt to lead to too great an effort, and to a long continuance in the water, both of which are highly prejudicial to most persons.

SECT. 6.—GREAT SWIMMING FEATS.

FASTEST TIMES ON RECORD.—Commencing with open air still-water swimming, W. Cole of London has achieved 100 yards in 1 min. 15 sec. in the Serpentine. In the same water E. T. Jones, of Leeds, undoubtedly the fastest swimmer of whom we have any accurate record, did the first 500 yards out of a mile in 6 min. 50 sec. and finished the full distance in 30 min. 3 sec.; whilst the full length of the Serpentine—variously measured as from 960 to 1000 yards—has been swum by W. Beckwith, jun., in 16 min. 6 sec. J. B. Johnson of Leeds swam 7 furlongs at the Welsh Harp, Hendon, in 26 min., and Jones has covered 1600 yards in the Edgbaston reservoir, Birmingham, in 29 min. 30 sec.

In bath swimming the best recorded performances are 10 lengths (400 yards) of the Lambeth bath in 5 min. 35 sec., by H. Gurr of London; and 12 lengths (480 yards) of the same bath in 7 min. 15 sec. by Jones of Leeds. At the Golden Lane bath, City, D. Ainsworth of London swam the first 1000 yards (37 lengths and over) out of 1026 yards in 16 min. 25 sec.

Coming next to the Thames tideway, H. Parker of London swam from Putney Aqueduct to Hammersmith Bridge, $1\frac{3}{4}$ miles, in 24 min. 35 sec., the tide being the strongest of the springs. In the match between Whyte and Coulter (both of London) from London Bridge to Greenwich, the first mile was swum in 11 min. 43 sec., $1\frac{1}{2}$ miles in 17 min. 23 sec., 2 miles in 23 min. 13 sec., 3 miles in 35 min. 23 sec., 4 miles in 48 min. 19 sec., and 5 miles in 1 h. 4 min. 23 sec. The tide was an average one, the springs being about half off.

Long Distance Swimming.—At veritable long-distance swimming in salt water no one has ever approached the performances of the celebrated Matthew Webb of the British Mercantile Marine. In June, 1874, he swam from Dover to the N.E. Varne buoy, a distance of 9½ nautical, or about 11 statute miles; on July 3, 1875, from Blackwall Pier to Gravesend Town Pier, 16 nautical miles, or nearly 18½ statute miles, in 4 h. 52 min.; on July 19, 1875, from Dover to Ramsgate, 15 nautical miles, or about 17¼ statute miles, in 8 h. 45 min; and 13½ nautical or 15½ statute miles in 6 h. 48½ min. from Dover to outside the S. Sand Head on Aug. 12, 1875, in an unsuccessful attempt—owing to bad weather—to swim from England to France, a distance of 17½ nautical miles at the narrowest part of Dover Straits. On August 24-25, 1875, he accomplished this unparalleled feat, starting from the head of the Admiralty Pier, Dover, and landing half a mile to the westward of Calais Pier, a distance of 21¼ nautical miles. Owing to the tides, however, the actual ground swum over was 39½ nautical, or about 45½ statute miles, in 21 h. 44 min. 55 sec., without touching a boat or artificial support of any kind. The longest distance ever swum in fresh water was by F. Cavill of the Fulham Road, in the Thames, on Sept. 15, 1875. He started from Putney Pier on a strong spring tide, swam 1¾ statute miles in 39 min.; 5½ in 1 h. 37 min.; 7½ in 2 h. 8 min. 31 sec.; 12 in 3 h. 22 min., and reached Blackwall Pier, 13 statute miles and 3 furlongs, in 3h. 50 min.

Diving.—The best diving performance on record is by J. B. Johnson of Leeds, who has remained under water for 3 min. 35⅖ sec.

Sect. 7.—Bathing.

The Best Bathing-Places are the sands of the sea-shores, or a clear running stream with shelving banks, when the swimmer is young and inexperienced; but when he is capable of jumping off the bank, he should choose a part where the water is at least nine feet deep, close to the shore, or within the distance of a yard or a yard and a half. Next to these are the swimming-baths now to be had in most of our provincial cities, and common enough in London.

The Best Time of the Day for bathing is between breakfast and dinner, with the stomach neither full nor empty; and no one should ever think of entering the water in either of these conditions—eating a biscuit if fasting, and carefully avoiding bathing directly after a full meal. Generally speaking, bathing before breakfast, in delicate constitutions, is not attended with sufficient reaction, which is marked, when present, by a good glow of the skin. Many, however, are robust enough to bear it with impunity, and bathe every day before breakfasting almost all the year round, even breaking the ice for that purpose. As a rule, however, it is a bad practice, and the hour above-mentioned is much better for nearly all purposes, except those of convenience. With regard to winter bathing, it is only adapted to the very robust; and in the months of December, January, and February, it will seldom be long borne with impunity even by them.

The Length of Time during which, in ordinary cases, the body will bear immersion without injury, will average from a quarter to half an hour, according to the season; but if the weather is cold, a mere plunge is all that is prudent.

Sect. 8.—Cramp, Rescue from Drowning, &c.

Cramp is the bugbear of the bather; but, unless he is very far from assistance, he ought never to be alarmed at its occurrence. It is seldom that it attacks more than one limb; and he is a very awkward swimmer who cannot support himself with three until assistance comes. The best plan is for the swimmer to throw himself on his back, and forcibly extend the limb by pointing the toe, when it soon leaves the part, and the usual mode may be again tried. Sometimes cramp seizes the bowels, and then the use of both legs is suspended, unless the swimmer is regardless of pain. It should be known that pain alone is to be feared, and that if that can be borne the cramped muscle cannot be injured by persisting in its use through all the pain caused by its forced employment. In cramp of the bowels, the only plan is to float on the back till it goes, or till assistance comes.

The Saving a Drowning Person may be effected by one or two going to him

and sustaining him by treading water, if they can depend upon his presence of mind. In this case the supporters should not approach in front, but from behind, and grasp him by the arm between the elbow and shoulder, so as to prevent his laying hold. If, however, in spite of these precautions, the drowning man should seize firmly hold of another coming to his aid, the only remedy is to sink both to the bottom, and then shake off the grappling limbs, which generally let go as soon as they find that they leave the surface; in any case, however, they must be forced to quit, and the aid must be deferred till animation is suspended. In all cases this is the safest plan, and as soon as the struggles cease, and not till then, the swimmer can easily push the drowning man at arm's length before him to the shore, when restorative means may at once be used. This is done by swimming with one hand and both legs; but if this cannot be managed, then the body should be turned on its back and towed or pushed to the shore; but should it be let go, it often sinks and is lost; and it is very difficult to manage, except by giving up one hand entirely to the purpose.

Mr. J. R. Hodgson, of Sunderland, nearly twenty years ago issued instructions for the rescue of drowning persons, and as he had himself saved a great many lives, his advice has the advantage of being the result of his own practical experience. It is as follows:—1st. When you approach a person drowning in the water, assure him, with a loud and firm voice, that he is safe. 2nd. Before jumping in to save him divest yourself as far and as quickly as possible of all clothes; tear them off, if necessary, but if there is not time, loose, at all events, the foot of your drawers, for if they are tied, as if you do not do they fill with water and drag you. 3rd. On swimming to a person in the water, if he be struggling, do not seize him then, but keep off for a few seconds, till he gets quiet; for it is sheer madness to take hold of a man when he is struggling in the water, and if you do, you run a great risk. 4th. Then get close to him, and take fast hold of the hair of his head, turn him as quickly as possible on to his back, give him a sudden pull, and this will cause him to float; then throw yourself on your back also, and swim for the shore, both hands having hold of his hair, you on your back, and he also on his, and, of course, his back to your stomach. In this way you will get sooner and safer ashore than by any other means, and you can easily thus swim with two or three persons. The writer has often, as an experiment, done it with four, and gone with them forty or fifty yards in the sea. One great advantage of this method is, that it enables you to keep your head up, and also to hold the person's head up you are trying to save. It is of primary importance that you take fast hold of the hair, and throw both the person and yourself on your backs. After many experiments, I find this vastly preferable to all the other methods. You can, in this manner, float nearly as long as you please, or until a boat or other help can be obtained. 5th. I believe there is no such thing as a death-*grasp;* at least, it must be unusual, for I have seen many persons drowned, and have never witnessed it. As soon as a drowning man begins to get feeble and to lose his recollection, he gradually slackens his hold, until he quits it altogether. No apprehension need therefore be felt on that head when attempting to rescue a drowning person. 6th. After a person has sunk to the bottom, if the water be smooth, the exact position where the body lies may be known by the air-bubbles, which will occasionally rise to the surface, allowance being made, of course, for the motion of the water, if in a tideway or stream, which will have carried the bubbles out of a perpendicular course in rising to the surface. A body may be often regained from the bottom, before too late for recovery, by diving for it in the direction indicated by these bubbles. 7th. On rescuing a person by diving to the bottom, the hair of the head should be seized by one hand only, and the other used in conjunction with the feet in raising yourself and the drowning person to the surface. 8th. If in the sea, it may sometimes be a great error to try to get to land. If there be a strong "out-setting" tide, and you are swimming, either by yourself, or having hold of a person who cannot swim, then get on to your back and float till help comes. Many a man exhausts himself by stemming the billows for the shore on a back-going tide, and sinks in the effort, when, if he had

floated, a boat or other aid might have been obtained. 9th. These instructions apply alike to all circumstances, whether the roughest sea or smooth water.

Sect. 9.—Restoration of the Apparently Drowned.

The Restoration of persons who have been long immersed is better left to medical aid, where that can be obtained. Therefore send immediately for medical assistance as well as for blankets and dry clothing; but proceed at once to treat the patient, securing as much fresh air as possible. The points to be aimed at are, first, the restoration of breathing: and secondly, the promotion of warmth and circulation as soon as breathing is restored. The best means to restore the action of the lungs and the process of breathing is by observing the following directions, issued by the Royal Humane Society. The efforts to restore life must be persevered in until the arrival of medical assistance, or until the pulse and breathing have ceased for at least an hour.

Fig. 1.—Drawing air into the lungs.

Treatment to Restore Natural Breathing.

Rule 1. *To maintain a Free Entrance of Air into the Windpipe.*—Cleanse the mouth and nostrils; open the mouth; draw forward the patient's tongue, and keep it forward: an elastic band over the tongue and under the chin will answer this purpose. Remove all tight clothing from about the neck and chest.

Rule 2. *To adjust the Patient's Position.*—Place the patient on his back on a flat surface, inclined a little from the feet upwards; raise and support the head and shoulders on a small firm cushion or folded article of dress placed under the shoulder-blades.

Rule 3. *To Imitate the Movements of Breathing.*—Grasp the patient's arms just above the elbows, and draw the arms gently and steadily upwards (see *fig.* 1), until they meet above the head (this is for the purpose of drawing air into the lungs); and keep the arms in that position for two seconds. Then turn down the patient's arms, and press them gently and firmly for two seconds against the sides of the chest, as shown in *fig.* 2. (this is with the object of pressing air out of the lungs. Pressure on the breast-bone will aid this.)

Repeat these movements alternately deliberately, and perseveringly, fifteen times in a minute, until a spontaneous effort to respire is perceived, immediately upon which cease to imitate the movements of breathing, and proceed as directed below to induce circulation and warmth.

Should a warm bath be procurable the body may be placed in it up to the neck, continuing to imitate the movements of breathing. Raise the body in twenty seconds in a sitting position, and dash cold water against the chest and face, and ammonia or smelling salts under the nose. The

patient should not be kept in the warm bath longer than five or six minutes.

To excite Inspiration.— During the employment of the above method excite the nostrils with snuff or smelling-salts, or tickle the throat with a feather. Rub the chest and face briskly, and dash cold and hot water alternately on them.

TREATMENT AFTER NATURAL BREATHING HAS BEEN RESTORED.

To induce Circulation and Warmth.— Wrap the patient in dry blankets and commence rubbing the limbs upwards, firmly and energetically. The friction must be continued under the blankets or over the dry clothing.

Promote the warmth of the body by the application of hot flannels, bottles or bladders of hot water, heated bricks, &c., to the pit of the stomach, the armpits, between the thighs, and to the soles of the feet. Warm clothing may generally be obtained from bystanders.

On the restoration of life, when the power of swallowing has returned, a

FIG. 2.—PRESSING AIR OUT OF THE LUNGS.

teaspoonful of warm water, small quantities of wine, warm brandy and water, or coffee, should be given. The patient should be kept in bed, and a disposition to sleep encouraged. During reaction, large mustard plasters to the chest and below the shoulders will greatly relieve the distressed breathing.

CHAPTER II.

SKATING.

SECT 1.—THE SKATE.

SKATING as a pastime is comparatively of modern origin, but as a means of progression dates from an early period. Our ancestors used skates made of wood and the bones of animals, which they bound to their feet, and then propelled themselves by means of poles shod with an iron spike. The wooden skate was at a later period shod with iron, and gave rise to the modern skate, the blade of which is entirely of metal. The English, curiously enough, were, up to a recent period, in spite of our usually mild winters, the only people who excelled in the art of *figure* skating, but by the route of our Canadian possessions the art has percolated through to the United States, and our American cousins now practise figure skating with considerable success.

The MODERN SKATE is either made entirely of metal and strapless, being fixed to the skater's boot by means of clumps or other similar devices, or it is composed of wood, for the foot to

rest on, with a runner or blade of steel, and is attached to the foot by means of straps. If we do not mind the clumsy appearance, nothing can excel a skate strapped to the foot; but modern taste requires a skate that can be put on and taken off instantly. The Acme, the Barney and Berry, Hilliard's, &c., are examples of strapless skates, and are all good. If a strap be used, it should be furnished with Fogg's patent buckle, which can be tightened or slackened to the sixteenth of an inch.

THE SKATE-BLADE was formerly fluted to prevent supposed lateral slipping, but this fluting is quite unnecessary and is now obsolete, the concavity given to the skate-blade by grinding it on the lap at right angles to the length of the blade being more than sufficient to ensure the cutting edge holding the ice without slipping laterally. The blade of the skate should be no deeper than will ensure a curve being made without the edge of the boot, to which the skate is attached, touching the ice. The curve of the blade for running swiftly on ice should be very slight, but for figure skating a curve corresponding to the radius of a seven-foot circle has been found the best, and such curve should be equal all through, and not more curved at the heel or toe, as was formerly the case. The blade also should be of equal thickness throughout. For swift running it should be as thin as an ordinary piece of window-glass, and the blade should project some four inches beyond the toe. For figure skating a thickness of rather less than a quarter of an inch is best; the blade being rather longer than the boot and rounded at the toe and the heel. For figure skating also, the angle of the edge should be a right angle. As a skate-blade is usually constructed the portion attached to the wood is thinner than the part coming in contact with the ice, consequently the edge of the skate is an acute angle; by grinding this edge to a right angle, a sufficiently cutting edge is obtained and a saving of friction effected. Moreover, as a right angle is thicker than an acute angle, the blade may be made of hardened steel without fear of its chipping.

SECT. 2.—THE DRESS.

SKATING, like all exercises in which *speed* is attained, causes perspiration, and as a sharp frost comes in England so seldom, every skater works hard when he has the opportunity, and runs corresponding risk of a chill from the cold atmosphere; hence flannel next the skin is a necessity. Warm but light clothing while skating, with a great-coat to don when the exercise is over, is the most comfortable, and the safest way of avoiding cold.

TIGHT-FITTING BOOTS are essential: more especially when a strapless skate is used; but in all so-called strapless skates a small strap passing under the heel and over the instep is of advantage as it does away with the feeling of the skate always pulling at the boot, as in using a boot-jack. The heels should be almost *nil*, so that the skate-blade may be parallel with the foot. With a modern boot, with high heels, the toe is so depressed that forward skating is almost impossible, in consequence of the weight of the body being on the toe. Moderately thick laced boots are the best; and if the instep be galled by the pressure of the skate, a pad of flannel or a double tongue will remedy the evil.

ALL ALTERATIONS of skating-boots and grinding of skates, &c., should be seen to at the *close* and not the beginning of the skating season. If left till the ice is bearing, workmen are so busy that the work is sure to be badly done.

SECT. 3.—HINTS TO BEGINNERS.

STRAPLESS SKATES should be carefully fitted to the boots before going to the skating rink. With the Acme, Hilliard, and similar skates, the heels of the boot should be filed so that the pyramidal form of the heel be destroyed and rendered straight up and down. Without this is done the heel clamp will not properly seize the heel. With the Barney and Berry skate the heel is attached by a T-plate—the best of all fastenings, but one which necessitates a plate being fixed into the heel of the boot.

FOR BEGINNERS, the ice called "snow ice," not being quite so hard and slippery as the pure black ice, is the best. Adventitous aids such as sticks, chairs, &c., are to be avoided. A beginner may be assisted by a good skater taking his pupil's hands sideways and helping him until he can struggle along by himself. Falls are inevitable, but as

the person falling generally reaches the ice at such an angle as will ensure his slipping, little harm will ensue; and though the falls may be temporarily discouraging, and the learner's efforts seem to be productive of no result, the steady practice of to-day will tell its tale on the morrow, and that which at one time seemed impossible will afterwards come with facility.

In the first struggles to obtain a mastery of the ice, the feet should be kept as close together as is consistent with safety. In attempting to progress, say, on the right leg, the feet should be placed at almost right angles, and the knee of the right leg, at the moment of starting, be bent, the push forward being effected by the left leg. As soon as the start is effected and the skater is travelling on the right leg, the knee should be straightened, and travelling so continued until the impulse caused by the stroke given by the left foot subsides; then the left foot should be placed on the ice, the body balanced on it, and the stroke or push forward be made with the right leg, and so on. The balancing necessary to effect alternate strokes on either leg will be assisted by the skater's arms, which in a beginner will be thrown about in all directions. In the practiced skater, the arms are kept quiet, and the body perfectly upright. The strokes in ordinary forward skating are from the *inside* edge, and the progression will also be on that edge at first. The fast skaters of the Fen country, in their skating matches, travel on a slight curve of *outside* edge, turning over the foot to the inside at the end of each glide, in order to get the powerful inside stroke.

THE FOLLOWING GENERAL DIRECTIONS apply to all the simple movements, and should be carefully attended to.

1. The skater should never look at his feet; if he does, the body must necessarily be bent and a true balance impossible. If his eyes are on a line with the horizon and his heels pretty near together, the body will be more or less upright.

2. In forward skating the body must be slightly inclined forward, and in back skating slightly backward. Skaters, in trying backward movements with the body inclined forwards, often get falls from this cause, which would be avoided if they had sufficient pluck to throw the balance boldly on the heel of the skate.

3. The face of the skater should always be turned in the direction in which he is going, as this tends to bring the shoulders in the proper line for delicate balancing.

4. Stopping, with the modern round-heeled skate, is effected by placing the edge of one of the skates on the ice at right angles to the other.

5. All movements should be done without spasmodic effort; and this is only to be accomplished by systematic practice. Whenever a man is seen to do with apparent ease a figure that is acknowledged to be difficult, it may be at once concluded that such effect has been the result of steady and systematic practice.

6. One movement learned thoroughly is better than twenty done negligently.

7. The arms of the skater may at first be used as a counterpoise, but when proficiency is obtained the arms should be kept quiet and the shoulders used in balancing.

SECT. 4.—FIGURE SKATING.

The germs of all figure skating are contained in the outside and inside edges forwards and backwards, and the common three. To acquire the outside edge, say on the right leg, the start should be effected as in straight-forward skating, when the head should be turned to the right and the left shoulder brought forward; a slight curve on the

right foot (O R) will be the result; but as this is something new, the beginner will not be able to hold it long. By advancing the left foot and putting it down and continuing the curve in the direction of the curve formed by the right foot, he will be immediately relieved, as he will be on the inside edge of the left foot (I L), with which he has been made familiar by his practice in

skating straight-forward. When steady on the left foot, the right should be again put down in front of the left on the outside edge, and the practice varied by changing the direction of going from left to right, the left foot then being on the outside and the right foot on the inside.

When able to hold the outside edge the feet should be used alternately on the outside edge without the intervention of the inside. At the moment of making the stroke the foot is turned over from the outside to the inside edge. Then comes the "cross-roll," which is skated by crossing the feet at the end of a curve on one foot, and so dropping on to the outside of the other without turning over the foot to get the stroke from the inside.

OUTSIDE EDGE, RIGHT AND LEFT, FORWARDS.

Above is a diagram of the ordinary outside edge where the turning over of the feet to get the stroke from the inside of the skate is shown. And below is a diagram of the cross-roll, where the stroke is from the outside.

If instead of a simple curve a perfect circle be completed on either foot by means of the ordinary outside or inside edges forwards or backwards, or by the cross-roll forwards or backwards, the figure of eight is the result. Eights formed from the two edges are excellent practice, as is also an ordinary outside or inside edge in the form of a spiral, the skater holding the edge till he comes to a state of quiescence.

Before the skater can execute a three he must learn to skate backwards. To do this, let him turn in the toes and press on the inside edge, taking alternate steps. When speed is attained, one foot should be raised and the travelling done on the inside of the other, and so on. The difficulty in skating threes lies more in the inability of the skater to hold the inside edge backwards after the turn is made than in the turn itself. To make a three, say on the right foot, the skater starts on a curve of outside edge (ROF); and when he wishes to turn to inside back (RIB), he presses on the toe of the skate and suddenly brings forward his left shoulder, and so reverses the order of going. As soon as the turn is made the left foot must be turned *out* and the left shoulder kept back. If this be attended to, the size of the tail of the three can be regulated to a nicety. If the left foot be turned *in*, the left shoulder will also be turned towards the centre, and the curve of inside back will consequently be small and contracted.

CROSS-ROLL.

FIGURE OF 8. SPIRAL.

FIGURE OF 3.

Threes can be skated from all edges, starting from outside and inside forwards and outside and inside back.

When the three has been acquired, the outside edge backwards is easily learned by putting the other foot down at the end of a three and continuing the curve in the same direction. The cross-roll backwards can be attained by simply turning out the feet and walking backwards.

The various figures and movements in figure-skating are numberless: in a

short article like the present it is impossible to enumerate them; but the enthusiastic skater may refer to a work on skating entitled "A System of Figure Skating" (2nd edit., Horace Cox, 346 Strand), where the combined movements known as the "Skating Club Figures" are duly described, and all the modern figures, such as "Grapevines," "Loops," "Cross Cuts," &c., duly represented.

SECT. 5.—RECORDS OF FAST TIME.

Accurate records of fast skating are, it would appear, not very numerous. The following times have been named by correspondents in *The Field* as among the best known:—John Drake, jun., has skated half a mile in 1 min. 15 sec. on several occasions; John Gittam skated a mile in 2 min. 29 sec., and John Drake, sen., skated two miles in 5½ minutes. The latter also skated 25 miles in two hours, on his return home from some matches in the Fens. During the severe frost of last winter, a number of skating contests took place, as usual in such weather, in the neighbourhood of various towns in the Fen district; and the fastest time recorded was that of W. See, who accomplished 1¼ miles in 2 min. 36 sec. on Dec. 29, 1874, at Ramsey, Huntingdonshire. The race was run in heats, and See was afterwards defeated, the ultimate winner being T. Watkinson, whose time was not stated, the above being said to be the fastest heat of the day.

SECT. 6.—PRECAUTIONS ON THE ICE.

If the skater be immersed in the water, the same directions which are given under the head of "Swimming" may be serviceable. To avoid risk of immersion the skater should look out for rotten ice—if he comes upon it suddenly he should skate rapidly but smoothly away, making use of both feet at the same time, as ice will often bear the weight of a man when distributed on his two feet, while it would break if the whole of his weight were on one. If the skater falls from the ice giving way, he should crawl away on his hands and knees. If he falls through, he should extend his arms across the hole and tread water till assistance is brought. Skaters on ice with deep water underneath should *always* have a rope and a ladder at hand.

SECT. 7.—ROLLER SKATING.

When we consider the great popularity of ice skating, and the extremely short period in each year during which it can be indulged in, there is nothing remarkable in the idea of obtaining a substitute. As ice was the means of giving so much enjoyment to the skater, it was natural that something to imitate it, on which ice skates could be used, would first present itself to notice, and many years ago a substance representing ice was laid down at the Baker-street Bazaar, and on this a rude attempt at skating was possible; but the exertion, in consequence of the extreme friction, was so great that it was soon abandoned. As far as we know, the first attempt to obtain the semblance of skating by means of a mechanical skate on ordinary floors, instead of using the ice skate on a prepared surface representing ice, was made by one R. J. Tyers, a fruiterer of Piccadilly, who in the year 1823 patented a skate which worked by means of rollers. It consisted of five rollers in a line, the middle roller being the largest, and the others, before and behind, being gradually smaller. By these means the inventor claimed "to perform the various evolutions and movements peculiar to the art of skating." In consequence of the shortening of the longitudinal bearing of this skate, it may be forced round in a plane parallel to the skating surface, and a reversion of movement (as in the common three) is possible by pivoting on one or other of the large centre wheels or rollers. Various other patents for roller skates, all on the same idea, were taken out in England and America up to the year 1861, the most noticeable being "Shaler's Patent" (taken out in the year 1860), in which the rollers were grooved, and a tyre of india-rubber forced into the groove. None of these skates were guidable in curves, except at the expense of enormous friction.

In the year 1865, J. L. Plimpton, of New York, patented a skate in England, in which the wheels, while setting square on the surface, would, from the peculiar way in which they were hung, describe a curve to the right or left, on the skater's leaning to the right or left. When this had been attained, all skating figures known on ice were possible,

and it then only became a question of the surface or medium on which these skates should be used. In America, where roller skating became a "furor," pitch pine floors, carefully prepared, so that the edge and not the flat of the grain of the wood was uppermost, and painted with several coats of paint, were considered the best. In 1870 (although the invention had been used in England by professional skaters at theatres since 1867) the first lot of skates found their way here, and a rink was opened at Liverpool. Shortly afterwards an ice rink, which had been constructed at Brighton of Portland cement, had the water drained off and the bed used as a medium for the use of the roller skates. Prince's Club then took it up and constructed a similar rink, and the popularity of roller skating at that establishment has doubtless contributed greatly to make roller skating the fashionable amusement it is.

With the Plimpton Skate, the wheels (which are four—two at the toe and two at the heel) *must* set in such a curve as is consistent with the leaning over. As long as the skater is leaning over at a certain angle, the skates *will* pursue a certain curve, and no forcing of the skate can alter this. Hence an ice skater accustomed to his skate, formed with a blade ground to the radius of a circle, and on which consequently he can twist about *ad libitum*, feels at first cramped and constrained on the Plimpton skate. The learner on the Plimpton skate, on the other hand, feels no stability when he first tries the ice skate. It appears to be all pivot, and he is unable to guide it; but the proficient on rollers is after a little practice greatly assisted by the knowledge and power acquired on the rollers when he comes to try ice skating, and *vice versâ*, the ice skater is greatly helped by his ice knowledge in attempting to acquire the art on rollers. As the wheels set so as to take a curve in accordance with the leaning over, and as most people in beginning to learn skating, whether they are ice skaters or not, bend the ankles *in*, the wheels set in and cause the toes to run together. Hence for the ice skater, over and above the feeling of utter helplessness and disgust at not at once being able to perform his accustomed evolutions, he has the inability of being able to guide his feet on any other than an inside edge. To obviate this the beginner on rollers should start and walk with his feet toed out at half right-angles (*fig.* A), taking care to make the heel of one foot touch the toe of the other. After a practice of some yards in this way, putting the feet down in the same position, he may allow either foot to glide two or three inches, gradually increasing the glide until he finds he can "strike out" as on ice. Many people feel great difficulty in preventing the toes from turning in, and a good practice to prevent this is the "cross-roll." With a practised skater to hold him up, the beginner should start, and,

Fig. A.

Fig. B.

after making a stroke with one foot, cross the other over in front (*fig.* B), put it down with the toes *turned in*, and throw his balance outwards on that foot. This will set him on the outside edge, and a very little practice will enable him to control the feet, and prevent them turning in, as he will learn that the least pressure on the outside of the skate will cause his skate to run in an outside instead of an inside curve.

For Ladies, roller skating on Plimpton skates is more graceful and easier to acquire than skating on ice, and for the following reasons: In ice skating the blade of the skate is some 1½ inches from the ice, and the point of contact from which the leaning over is effected is the edge of the skate-blade and the ice; consequently there is a considerable strain on the ankle from the leverage; but in the Plimpton skate the leaning over is effected by the mechanical construction of the skate, and the mechanism is directly under the foot stock, and, therefore, the strain on the ankle is much less on the roller than on the ice skate.

The Instructions given for attaining the various movements on ice will apply equally well to the rollers when once the balance is acquired; but the movements are more difficult on the roller than on the ice skate by reason of its

being necessary to use either the toe or the heel as a pivot; whereas, on an ice skate, in consequence of its being ground to the radius of a circle, the pivot exists wherever the weight of the skater may be at the moment of turning, and a very slight raising of the toe or heel is all that is necessary.

THE RINKS.—One of the great difficulties connected with bringing roller skating to perfection is the medium to be used as a skating surface. Under cover, undoubtedly pine wood set edgewise, as before explained, and well painted, is the best, particularly if it be made according to a patent of Mr. J. L. Plimpton, in strips of 1¼in., and battened with diagonal battens, so that, in the event of the floor shrinking or swelling, it can be opened or shut after the manner of a parallel ruler; but in England people have a fancy for open-air exercise, particularly where the exercise is one that produces violent perspiration.

The rinks at Brighton, and also that at Prince's Club, are composed of concrete faced with a species of Portland cement, than which nothing can be worse; inasmuch as the rollers, through the disintegration of the cement, are subjected to a grinding process, both on the periphery of the wheel and on the axle bearings, that in the course of an hour or so affects the rollers or wheels to the extent of grinding away the softer portions of the wood, and leaving the harder portions intact. They then become oval, three-cornered, coned, and, in fact, any shape but round; consequently the semblance to the smooth gliding of ice skating is quite destroyed by the jarring and friction.

Asphalte as an outdoor medium is much better, inasmuch as there is no disintegration, but there is still much to desire in asphalte. If laid with so little bitumen as to be hard and good for skating in summer, it cracks in winter; if a sufficient quantity of bitumen be used to obviate the cracking in winter, it becomes so soft in summer that the friction is immense. It is quite possible that some sort of cement, rendered smooth, and painted with a substance similar to that used for preserving stone, and which prevents disintegration, will be the medium of the future.

Plimpton's patent skates have never been sold to the public, and the patentee is probably right in this. If used on a bad medium, such as carpet or a bad floor, the person trying them would at once decry the invention as a delusion. By confining the skates to persons to whom he grants concessions to let them out on hire, he insures, first, that the exercise shall be properly conducted, care being taken to grant concessions to persons of acknowledged position and local standing; secondly, he insures the skates being used only on a proper medium; thirdly, he secures the prompt mending of broken or damaged skates by competent persons.

Roller skating has had so sudden a rise in England that it is prophesied by many that it is ephemeral and will shortly die out. We do not think so, but believe it will take its place amongst the sports and pastimes of England. It is difficult of acquirement even in its rudimentary form; there is no finality in it in its higher branches any more than there is in ice skating; by its means the hard-worked professional man can obtain an hour's physical exercise at any hour of the day most convenient to him, and in a form that affords him the purest delight; and, lastly, it is not like cricket or other similar pastimes that require the banding together of many persons before they can be enjoyed.

PRECAUTIONS.—Roller skating, as ice skating, produces intense perspiration; therefore, let the skater wrap himself up well on leaving the rink. Let the beginner be careful not to lean back too much, as the hind rollers will throw him as easily as the round-heeled skate on ice, and as swiftly; and on boards or asphalte he will not have his fall broken by slipping when he comes in contact with the surface, as he would if his fall were on ice.

CHAPTER III.

BICYCLING.

Sect. 1.—Introduction of Bicycles.

The first modern bicycle which was ridden in London appeared during the year 1868, having been imported from Paris, where the two-wheeled velocipede had already attracted attention.

Whether Mr. Charles Spencer, the gymnast and aeronaut, or Mr. Lewis Moore of Northampton, the well-known amateur sailor, is entitled to the honour of riding the first of these machines in England, is a question upon which evidence may some day be taken; but both of them certainly rode bicycles over metropolitan roads somewhat early in the year named. Mr. Moore is about six feet high, and his appearance upon a driving wheel only three feet in diameter was strange. As, however, thirty-six inches was the maximum height of a bicycle wheel at that time, the performances of Mr. Moore were regarded with astonishment by many gentlemen of his acquaintance. One of these—an eminent engineer—who resided in the same Kentish village, is said to have laughed at the bicycle, and stated that no machine could be devised which a man might propel by muscular effort at a greater pace than he could run. It is amusing to remember that Mr. Moore habitually rode from his house to the river—down hill—but uniformly walked up the slight ascent when returning. Mr. Spencer, who is of much shorter stature than Mr. Moore, adopted bicycling partly, it is believed, as a profession, but also as a pastime, and he has been in one way or another connected with bicycles from the year of their introduction into this country until the present time.

Riders of bicycles became numerous during 1869, and the pastime promised to take a firm hold of English athletes. Races were frequently held in London and the provinces, and strange stories were told of wonderful performances upon these machines. Pictures of velocipedes appeared in the current literature of that time, and a magazine devoted to mechanics published scores of pages of pictures and suggestions respecting bicycles. Some of these, while showing to what absurd lengths inventors will go, also point out the comparative uselessness of the bicycles then employed. Still, in spite of their clumsiness and weight, those instruments were largely sold, and their noisy progress over the roads became rather a nuisance. Men were met with struggling painfully up slight suburban ascents, or rattling rapidly down macadamized hills; but wherever bicyclists were encountered people expected to hear bad language and coarse conversation. The velocipede had in fact fallen into bad hands; and, as street traders and professional acrobats spent their Sundays and Mondays upon bicycles, the respectable people who had taken part in the movement shunned it, and bicycling sank almost out of notice—a result that was doubtless hastened by the unsatisfactory manner in which the bicycles were constructed, and the absence of all that now makes bicycle travelling so pleasant.

Sect. 2.—Improvements.

Notwithstanding the decline of bicycling and the faultiness of the best velocipedes then used, there were a few gentlemen who clung to the pastime they had, as it were, nursed, and among the legion of inventive mechanics who were roused into more or less absurd action, two or three men steadily worked on and practically revived the public interest in the neglected pastime.

Perhaps the two additions to the bicycle which have contributed most to its growing popularity are the india-rubber tyre and the step. The former was, it is believed, adopted first in Paris and introduced here by Johnson on the occasion of a race with John Keen, the present champion, on Fairmile Common, Surrey. The step was first added to a bicycle by James Starley of Coventry. So greatly did india-rubber tyres improve the pace of a bicycle, that Johnson, although an inferior rider, beat Keen with the greatest ease; and this fact caused manufacturers to commence experiments upon tyres which have resulted in something nearly approaching

perfection. The step has rendered larger wheels available, and thus opened to the athletic tourist a new means of seeing almost any country he may visit. It is, indeed, difficult to imagine how bicycling tours could have been organized and carried out successfully without these necessary additions to the bicycle; and so great was the impetus which the pastime received from their adoption, that several persons commenced the manufacture and sale of larger bicycles; and in this year (1875) nearly a dozen manufacturers of excellent bicycles send these graceful instruments to all parts of the country, and, indeed, to the Continent, America, the various colonies, and India. The demand has increased to such an extent that even the largest manufacturing establishments cannot keep pace with their orders, and thus the makers themselves are, to some extent, checking the rapid spread of bicycling by disappointing and wearying out their customers, who are frequently compelled to wait six or eight months for a new bicycle. It may, however, be taken for granted that when a bicycle is completed at either of the principal manufactories the beauty of its construction leaves little to be desired, and contrasts most favourably with the badly proportioned machines which were used two or three years since. Defects, however, should always be looked for on purchasing a bicycle, more especially if it be made by any but the highest class of manufacturers. Some hints on this subject will be given in Sect. 4.

Sect. 3.—Varieties of Bicycles.

There are seven kinds of bicycles which are very much used—the "Ariel," manufactured by Haynes and Jefferis of Coventry; the "Eagle Tension," made by Timberlake of Maidenhead; the "Eclipse," by John Keen of Clapham; the "Gentleman's," by the Coventry Machinist Company; the "John o' Groat," by T. Sparrow, Piccadilly; the "Nonpareil," by Stassen and Son, Euston Road, and the "Tension," by Grout, of Stoke Newington.

The Ariel differs from all others in the construction of its wheels; each spoke extends from the hub through a loop at the felloe and back to the opposite side of the hub, where it is fastened. There are twenty of these double spokes in a driving wheel, which is provided with a long lever projecting from the centre of the axle at right angles. In length this lever is equal to about two-thirds of the diameter of the wheel; it is perforated at each end, so that stout wires attached to the inner side of the felloe may pass through. These two wires are threaded at the end for the reception of nuts, and it is asserted that should a spoke become loose, a turn or two of these nuts will tighten it. The steering gear of this machine differs also from that of all other bicycles. Instead of carrying a long pin—a continuation of the fork through a socket, placing the steering-bar on the upper part of the pin and screwing it down with a nut—the inventor of the Ariel carried the front supports directly from the wheel bearings to the steering-bar. These are bolted together in two places, the lower bolt being placed between the back-bone and wheel, the upper one six or eight inches above the lower. On the upper side of the lower bolt and the under side of the upper one are cavities into which two centres, one at the shoulder of the back-bone, the other at its extreme upper end, work. It is claimed for this arrangement that steering is easier, while the fouling of the socket—a great annoyance to bicyclists—is avoided. The fact that such a practical man as John Keen, the champion, abandoned the socket for a steering arrangement similar to that of the Ariel, is evidence that the new method of guiding is not inferior to the old. The longest journey yet performed upon a bicycle within twenty-four hours of the start was 164 miles upon an Ariel.

In the Eclipse bicycles recently manufactured by Keen, he has improved upon even the Ariel in one respect. Instead of an upper bolt, the Eclipse has a very short socket; through this a continuation of the back-bone is carried, and into the thick sides of the socket the handles are firmly screwed. This bicycle may be considered the racer of the present day, as scarcely a match of any importance is won upon a velocipede of any other build. All the championships, both amateur and professional, have been won upon Eclipse bicycles; and the quickest times from one up to fifty miles have been accomplished upon

them. All other bicycles except the Ariel are made with sockets through which a long pin, from the upper end of the fork, works.

THE TENSION has the best tyres, which are so fixed to the felloes that the rubber and metal are inseparable without the aid of a chisel or other sharp instrument. Each spoke is screwed into two nuts, one in the felloe and one in the hub. Recently made Tensions are fitted with steering-bars which may be screwed up at any time, so that the nuisance and danger of a loose bar need not be endured.

THE JOHN O' GROAT is a good, serviceable bicycle, which can scarcely be distinguished from the "Gentleman's," although it passes through the hands of a practical mechanic who is a bicycle rider and has been connected with the bicycling business almost from the day when the first modern two-wheeler appeared in London. The best thing this inventor has done for the "John o' Groat" is the application of a new steering-bar which is neat and simple, and so manifest an improvement upon the old bars recently supplied with the "Gentleman's" bicycles that the Coventry Machinist Company have abandoned their own pattern in favour of Mr. Sparrow's, and "John o' Groat" bars are now invariably fitted to those machines.

THE GENTLEMAN'S bicycle has the "spider" wheel, in which each spoke passes through a nut. This nut is screwed into the hub, so that the spoke is not weakened by cutting a thread in it. Should a spoke wear loose, one or two turns of the nut will tighten it, although an amateur unskilled in mechanics should be very careful how he meddles with his wheel.

THE NONPAREIL bicycle is well furnished and graceful in all parts except the hubs, which appear unnecessarily heavy. There is no means of telling how the spokes are fastened unless by taking the wheel to pieces; but, however the fixture may be effected, the wheels stand well, and at least a dozen members of the north-western division of the London Bicycle Club will ride them over very rough ground.

THE EAGLE TENSION resembles the Nonpareil, although much less expensive; it is indeed the cheapest bicycle made, and costs at least 25 per cent. less than a machine by any of the other first-rate bicycle makers.

THE PRICES of bicycles increase with the size of the wheel, but a painted machine with a driving wheel 50 inches high should not cost more than 13*l.* unless fitted with some unusual appendage, such, for instance, as Keen's roller bearings, or Stassen's eccentric roller brake for the front wheel, each of which appliances will add about 2*l.* 10*s.* to the cost.

THE WEIGHT of a racing bicycle 54 inches high is about 38lbs.; but this is too light an instrument for ordinary road work. Experienced riders recommend that a roadster with a driving wheel 48 inches in diameter should weigh at least 48lbs., and for every additional inch of diameter in the driving wheel the weight of a roadster bicycle should increase at least one pound.

There is a roadster with wooden wheels and heavy framework called the "Beck," manufactured by the celebrated London opticians of that name. The weight of a 42-inch machine of this class is about 75lbs.; but in spite of this there are numerous riders who prefer these bicycles for travelling upon, as they are safe, may be ridden over almost any description of newly mended roadway, and can be trusted ten miles from a smithy, without fear or anxiety, in almost any country.

SECT. 4.—PRECAUTIONARY EXAMINATION OF BICYCLE.

A purchaser should, on receiving his bicycle from a manufacturer, examine it carefully, lest he accept and pay for an imperfect machine. Nothing is more common than for some manufacturers to send out bicycles which, from lack of supervision in the fitting stages, are almost unfit for use. Perhaps the most serious accident that can happen to a man who avoids collisions is the detaching of a front wheel tyre when he is going rapidly, as, for instance, down a hill. The purchaser will therefore do well to examine carefully the manner in which the tyre is fastened to the felloe. In a new bicycle there should be no point of weakness; the cement (if it be cemented) should hold uniformly all round: and any patches upon the sides show that the cement has been carelessly, and perhaps

ineffectually applied. When satisfied that the tyre is secure, the next point for examination is the wheel. Walking the bicycle slowly along, one may easily find whether the wheel runs truly by watching the tyre as it passes through the fork. If it remain equidistant from the inner sides of this, there is no cause for complaint. The buyer will next ascertain that the wheel is round, by carefully watching the upper part of the tyre as it passes beneath the arch of the fork. It may seem absurd to examine a bicycle wheel as to its roundness, but it sometimes happens that a purchaser becomes possessed of a wheel which is defective in this respect. The relative truth of the wheels is another important point, as it frequently happens that a new machine is sent home with its two wheels running in lines parallel to each other, instead of the smaller following in a direct line with the larger one, as it should do in every well-constructed bicycle. Before mounting his wheels the purchaser should also ascertain that the steering-bar is at right angles to the spring, as, if it be not, he will sit uncomfortably during his rides. The general firmness and correct fitting of a bicycle may be roughly tested by holding the back-bone two inches from the fork and shaking the machine once or twice; a good new one will remain silent, a bad new one will rattle. A short ride is the best means of ascertaining whether the spokes are all securely fastened. Some of the best riders upon roadsters consider that a bicycle is defective unless strong, firm, and silent; and certainly nothing is so annoying to the bicyclist as a rattle, which denotes weakness in some part of the machine beneath him.

Sect. 5.—Learning to Ride.

Any gentleman who wishes to acquire the art of riding a bicycle should pay a professional to teach him. He may have friends who are themselves riders, but it is unfair to subject any one of them to the pounding and pinching which a teacher receives; neither is it precisely right to ask a man who knows the pleasure of bicycling to forego an hour of delightful exercise in order that he may be accidentally bruised and otherwise damaged by a struggling novice who will catch at anything—even a shirt-collar or a hat—to save himself from falling. It may be, however, that no professional teacher is accessible, in which case an amateur must be pressed into the service, unless, indeed, a man is rash enough to attempt the difficult and dangerous task of teaching himself.

Assuming then that a friend who can ride a little has volunteered, the tyro should obtain a low bicycle—an old one will do very well. His companion, who will hold the bicycle, may allow him to sit upon the saddle, grasping the handles, with his feet clear of the pedals. He will then place his feet as lightly as possible upon the treadles, and the friend can wheel the bicycle forward. This for the mounted man commences a time of extreme helplessness. He begins to know he "never shall learn how to manage it," and continues to hold that belief for some hours. But the intensity of this conviction varies, as, for instance, when the tyro spirts with one foot for the fourth of a revolution of the wheel he gains courage, which, however, leaves him as he reclines helplessly on the supporting shoulder of the friend, whom he has unexpectedly clutched at the first point which presented itself. The best professional teacher, when he has placed his pupil in the saddle, holds the bicycle by its spring with his right hand, and places his left hand either upon the left handle of the bicycle or on the arm or side of the pupil. When the latter has been wheeled along a few hundred yards he should begin to feel his feet sufficiently to find out when the pressure ought to be commenced and discontinued. So soon as he learns this a desire will seize him to run alone, which must not be gratified, as the fall which invariably follows his liberation shakes the confidence he has acquired and puts him back considerably. The tyro should be held or assisted until he learns that by turning the wheel to the right or the left he can prevent a fall on that side to which he turns it. It is the comprehension of this fact, and the knowledge of how and when to alter the direction of the wheel, which enables a rider to go by himself; but a man must find out for himself when to do it, as his teacher cannot tell him. And the learner will do well to remember that the less he looks at his bicycle when he is in the saddle, the more speedily will he

acquire the art of riding with tolerable precision. When he has learned to sit his bicycle, to apply his strength and weight to the falling treadle only, and to steer with something approaching certainty, an ordinary teacher will afford him very little more instruction from the ground; for however devious the course of a young rider may be, the pace will soon tire an unmounted attendant. The novice will be told to keep his heels out and elbows in; to keep his weight as far forward as possible in ascending, and as far back as possible in descending, a hill; but the really good riding will come with practice.

Mounting.—Before attempting to ride straight or take long tours, the beginner should learn how to mount and dismount. Both operations may soon be learnt, and a rider who cannot get on or off a bicycle must suffer severe annoyance in a day's journey over ordinary roads. The best way for the beginner to learn mounting is by prevailing upon some person to hold a bicycle by its socket in such a manner that the novice can grasp the handles, lift his left foot upon the step, and, springing with his right from the ground, pass it behind or over the spring, and so far forward that, without lifting the left leg from the step, he can sit down upon the saddle. Directly he is seated, the left foot must be brought forwards to its treadle. He will find, that as the body rises it is best to put as much weight as possible upon the arms. When able to get into the saddle of a stationary bicycle properly, the learner should practise hopping by its side. Keeping firm hold of the handles and inclining the bicycle slightly from him, the left foot may be placed upon the step, when the hopping should immediately commence, as unless motion be imparted to the bicycle he and it may fall. Throwing as much weight as possible upon the handles, and thrusting strongly with the right foot, he will soon acquire sufficient speed to admit of his standing on the step, particularly if a trial be made down a gentle slope. In order to do this more effectually, he must, on leaving the ground, swing his right leg over the back-bone to the off-side of the bicycle, in order to preserve the balance of the machine. This is not an easy thing for a learner to do, and three or four failures are nearly certain to precede success, which, by the way, may be hastened if the learner will remember that the steering-bar is the greatest aid in mounting, as by it the weight is taken off the step, while through it the bicycle is kept upright. When he can stand upon the step of a bicycle in motion without assistance, the tyro can mount, as the remainder of the operation is extremely simple, as has been described. Confidence will be imparted by the presence of a friend within reach.

Dismounting is a much more simple matter. Continuing work with his right leg, the learner must bring the left foot from its treadle to the step, which he will easily find after a few attempts. Straightening his arms, he must lift himself from the saddle and bring the right foot over or behind the spring to the ground, allowing the left foot to leave the step almost at the same instant. If the bicycle be travelling quickly, the rider jumps from the step immediately his right leg is clear of the spring. The prettiest way of alighting is from the treadle, which is usually done by slowing the bicycle to a walking pace, throwing the weight of the body upon the handles, and, as the left treadle descends, passing the right leg over or behind the spring. The less weight there is placed upon the descending treadle the more neatly is this pretty manœuvre executed. It is the only way to descend properly from a high bicycle.

When the bicyclist can carry out the foregoing instructions, he has fairly entered upon the enjoyment of bicycling, but much careful practice will be necessary before he can consider himself a rider. He must, for instance, get rid of a tendency to grip the handles viciously, and acquire the art of riding in a straight line. He will find also that practice enables him to work so effectually as to lose no power. It is well to ride slowly at times, as nothing rests a man much more during a long journey than riding in a leisurely manner. Hundreds of riders, however, find it more difficult to ride slowly than quickly.

Sect. 6.—Touring and Racing.

It is difficult to say whether touring or racing is doing most to establish the reputation of bicycling as a sport.

There is undoubtedly pleasure of a high order in gliding through the country with the silence of a bird and the swiftness of a mail-coach. On the other hand, there is no machine upon which man can race at such a pace as he attains in the bicycle-saddle. But whether the rapid spread of the sport may be attributed to the sharp excitements of the course or the quiet and prolonged enjoyment of a trip through strange scenes, there can be no doubt that great interest is taken, even by non-riders, in the performances of men upon modern bicycles.

Among the races which have attracted attention are the Oxford and Cambridge bicycle race ridden over fifty miles of road; races by the minor clubs from London to Brighton and back, and from London to Bath; the contests for the amateur championship held every spring at the Lillie Bridge Grounds, Brompton; the meetings of the Surrey Bicycle Club at Kennington Oval, and of the London Bicycle Club at Lillie Bridge. In addition to these there are frequent professional race meetings at Wolverhampton and other towns.

The principal tours performed upon bicycles have been as follows:—From Aberdeen to London by Messrs. Custance and King of the Amateur Bicycle Club; from London to John o' Groat's by members of the Middlesex Bicycle Club; London to Land's End and Edinburgh by members of the London Bicycle Club. The longest distance ridden in one day was accomplished by Mr. H. Stanley-Thorpe, who attempted to ride from London to York, but was stopped by a bad wind thirty-five miles short of the latter city with two and a quarter hours of the twenty-four unexpired.

A good bicycle will cost no more for repairs, if fairly used, than a horse costs for shoeing. It causes no expense upon a journey, save a small expenditure for oil and cleaning; and an indifferent rider can average nine or ten miles an hour without feeling distressed at the end of a day of ordinary length.

Sect. 7.—Fastest Times on Record.

The following table shows the fastest times in which various distances, from one mile upwards, have been run upon made paths, with the name of the rider and the place where the performance took place:—

Miles.	By whom ridden and where.	Time. H. M. S.
1	J. Keen, at Sheffield	0 3 0
2	J. Keen, at Lillie Bridge	0 6 31
3	J. Keen, at Lillie Bridge	0 9 51
4	J. Keen, at Lillie Bridge	0 13 14
5	J. Keen, at Lillie Bridge	0 16 34
6	J. Keen, at Lillie Bridge	0 19 50
7	J. Keen, at Lillie Bridge	0 23 20
8	J. Keen, at Lillie Bridge	0 26 36
9	J. Keen, at Lillie Bridge	0 29 58
10	J. Keen, at Lillie Bridge	0 33 25¼
20	D. Stanton, at Lillie Bridge	1 12 38
30	J. Keen, at Wolverhampton	1 52 21
40	J. Keen, at Lillie Bridge	2 31 48
50	J. Keen, at Wolverhampton	3 9 21
60	J. Keen, at Lillie Bridge	4 11 24
70	D. Stanton, at Lillie Bridge	4 56 35
80	D. Stanton, at Lillie Bridge	5 46 48
90	D. Stanton, at Lillie Bridge	6 42 21
100	D. Stanton, at Lillie Bridge	7 35 43
106	D. Stanton, at Lillie Bridge	7 58 54½

David Stanton started on Tuesday, Oct. 26, 1875, to ride 650 miles at Lillie Bridge Grounds in seven consecutive days, for a bet of £50. It was stipulated that the rider should not commence before 6 A.M. nor continue riding after 6 P.M. on any day. He completed the distance about a quarter before five o'clock in the afternoon of the seventh day, his actual time in the saddle having been as follows:—

	Miles.	Yds.	H.	M.	S.
1st day.	100	1200	7	7	0
2nd ,,	94	1128	6	50	0
3rd ,,	100	1200	7	7	0
4th ,,	90	1080	7	34	0
5th ,,	90	1080	6	12	0
6th ,,	85	1020	6	2	0
7th ,,	87	1518	6	18	0

Thus 650 miles 1176 yards were ridden in 47 hours 10 min., net time, or an average of rather more than 13¾ miles an hour.

THE RIDING PARTY.

CHAPTER IV.

RIDING.

Sect. 1.—The Riding Horse and its Accoutrements.

The Horse used for Riding, commonly called "a hack," is of a somewhat different description from either the hunter or the racehorse; neither is he precisely like the "covert-hack," previously alluded to. Many thoroughbred racehorses turn out good hacks, and some hunters also are active enough to answer the purpose; but, generally speaking, this is not the case, and neither the one nor the other would come under the description of the "perfect hack." The most obvious distinction in hacks is between park-hacks and road-hacks; the former requiring only a fine form with showy action, while the latter are selected for their serviceable qualities, and must be capable of doing a distance in good time with ease to themselves and comfort to their riders.

The Park-Hack is generally what is called by the horse-dealers a "flat-catcher," that is to say, he is a showy horse with an appearance which will catch the eye, but yet really worthless, from some deficiency of constitution or infirmity of legs. There are every year turned out of the racing stables scores of useless brutes with legs which will not stand a preparation, in consequence of their tendency to inflame and become sore. Usually these horses are barely up to 11st., and also unfit for the hunting-field from defective hocks or from some peculiarity of temper which prevents their taking to jump; but they are often "well-topped"—that is, well-formed about the head, neck, and body—and to the inexperienced eye are very taking. They also often have high action, and sometimes particularly so, for the higher it is the more likely to occasion inflammation of the legs. These animals are put by, cooled down and blistered, and are then brought out as showy hacks for the use of gentlemen who merely require a short constitutional airing of an hour or an hour and a half every *fine* day; and, as fine days do not average above four per week, horses with the most infirm legs can generally accomplish that amount of work *if ridden quietly over hard ground*. Many such animals are exhibited daily in Hyde Park, where the soft ground of Rotten Row exactly suits them. Others of the most perfect description

and capable of standing as much work as any butcher's pony, are doubtless also to be seen there; still it must be admitted that the great majority of our modern good-looking hacks are incapable of doing as much work over hard ground as the coarser-bred and more common-looking brute in use among the butchers and dealers who attend country fairs from long distances.

Eastern blood is a great advantage in most respects, and no doubt when the animal possessing it is sound, he will bear the shocks of the road with impunity; but it is beyond question that he usually fails in the matter of enduring daily concussion on the road, and that a Welsh pony or Norman horse will stand nearly twice the amount of road-work without showing its effects. This is the weak point in the breed, partly arising from original want of size in the bone and joints, but chiefly, I imagine, from the constant use of stallions which have themselves suffered from inflammation of the legs; hence, in process of time, a breed of horses is formed which is more than naturally delicate about the legs. That the Arab blood is not necessarily inclined to produce inflammatory joints appears evident from the fact that in their native country they are peculiarly free from them, although used for long distances, and that in this country horses which are bred from modern Arabs are sound in their limbs, though otherwise unfit for the purpose for which they were bred. Safeguard, a descendant of the Wellesley Grey Arabian, got most of his stock with particularly wiry legs. I had one of them which would stand any amount of battering without mischief, and knew of several of the same character in other hands. Hence, I am led to conclude that the cause is not inherent in the blood, but is accidentally introduced by the use of rejected stallions for farmers' purposes. These get good-looking colts, which fetch high prices, and therefore suit the breeder's purpose just as well as the sounder horse, who would perhaps cost twice as much for his services. The breeder seldom tries the legs much, and it is only when put to work that the weakness is discovered which to the eye is not by any means perceptible.

From a long experience in my own case and in that of others, I am convinced that legs cannot be selected by the appearance or feel. I do not mean to say that out of forty horses the twenty with the best-looking legs will not beat the others, but that it is impossible for any judge, however good, to pronounce with anything like certainty whether a leg will stand or not, without knowing anything of the possessor of it. In so many instances have I seen a well-formed leg go to pieces directly, and a bad one stand, that I can only come to the conclusion that no certain opinion can be formed from a mere inspection. This is a great source of loss to the dealer who buys his horses after a long rest, and with the legs looking fine and sound; for even the necessary "showing out" will make many give way, and lameness ensues of a character which will not warrant a "return," yet sufficient to prevent a profitable sale. A horse sore from work is cooled down, physicked and put into a loose box; he is then blistered, and kept without more than quiet exercise till he is to be sold, and by that time his legs are as fine as the day he was foaled. Now, I defy anyone, however skilful, to detect the inherent weakness; but there it is, and on the first week's severe work the inflammation returns as bad as ever.

The park-hack not requiring legs to stand severe work, his place is well filled by any horse of good temper, safe, and showy action, and of elegant form. Good temper is necessary, because as these horses are not worked hard, they speedily become unmanageable if they are naturally of a vicious disposition. Work will quiet almost any horse; but in order to have a horse pleasant to ride at all times, whether fresh or stale, he must be of a very tractable temper indeed. Many horses which will come out of the stable, when fresh, in a state of fiery and hot impatience, rearing and kicking like mad animals, will when in good work be as quiet as donkeys; and hence it is not always wise to reject one showing these qualities, nor yet is it prudent for a bad horseman to mount one without previous riding, although he may in his usual state be quiet enough.

There are two bodily qualities which every hack should possess—first, a good shoulder; and secondly, a free use of the hind-quarter. It is of no

use for the fore-leg to be well raised and thrust forward, unless this action is well supported by the hind-leg. No hack is so unpleasant as the one which lifts his foot and puts it down again nearly in the same place. Here the defect is in the hind-quarter, which does not propel the body as the leg is lifted, and the consequence is the action I have noticed, in which the progress, though with a great deal of bustle, is not more than six miles an hour. At the same time too long a stride, either in the walk, trot, or gallop, is not pleasant; and the horse which has a moderately short quick action will in most cases be preferred. All this, as in the case of the legs, cannot be surely prognosticated from the shape; and hence the dealer who has a good mover will always say to his customer finding fault with the looks of a horse in the stable, "See him out, sir, and you will like him;" and such is frequently the fact. The worst-looking horse in the stable is often not only the best, but the best-looking, out, being quite a different animal in action. Indeed, every trial should be made before purchase, for it is not until the rider has actually mounted that the good or bad qualities, in point of comfort, are fully developed. Some people pretend to be able to pick a hack out by the eye alone; but though in large numbers they may succeed tolerably well, yet in many cases they will be wofully deceived.

The feet should always be good, and with plenty of horn; flat soles do not bear the road, nor do contracted heels, and there is no horse which requires such perfectly formed feet as this. The hunter or racehorse may be used when he could not get along at all on the road, but the hack *must* be sound in this part, or he will be crippled on the first piece of hard ground. In height, the park-hack usually ranges from 14 to 15½ hands; rarely, however, being much above 15 hands.

The Road-Hack may or may not be good-looking, but he must be able to walk, trot, and gallop in a most unexceptionable manner. The walk should, as in the park-hack, be safe and pleasant, the fore-foot well lifted, and deposited on its heel with a clean action of the hind-leg, by which it escapes "knuckling over" from being put down too soon, or "over-reaching" from the opposite extreme. Five miles an hour is the outside walking pace of a good hack, and though some will do considerably more, it is seldom by anything but a kind of shuffle, which is not pleasant to the rider nor elegant to the spectator. The trot should be of such a character that it may be brought down to eight miles an hour or extended to fourteen; and this is the perfection of the pace, for few horses can do both well, being either too close to the ground in the former for safety, or too set and lofty in their action for the latter. No defect is worse than the unsafe action resulting from a weakness of the extensor muscles of the arm. Here the action is pretty good as long as the horse is not tired, but after a few miles the leg is lifted with insufficient power, and the toe is constantly striking against some inequality of the ground, *from which it is not recovered.* This marks the defect, which must not be confounded with habitual stumbling. The latter is as likely to occur at starting as at any other time, and is always easily detected by watching the mode of putting down the foot; for in the naturally unsafe trotter the toe touches the ground first, and the heel then follows, as is evidenced by the state of the tip of the shoe. Here a trip may often occur, yet without any fall, because the extensors are strong, and effect a recovery after the mischief has been *nearly* done. When, however, the extensors are weak, the toe that has been well raised at first touches the ground after a few miles, and *not being rapidly recovered*, a fall of the most severe character ensues. For this reason it is necessary to ride a horse some distance before his action can be pronounced upon, and only then can it be said that he is fit for a timid or bad rider.

It is, I am sure, the height of absurdity to recommend this or that shape as being necessary. Hacks go in all shapes, and though oblique shoulders may be desirable, yet many a good hack is without them. Action is the *sine quâ non*, united to stoutness, temper and soundness both of wind and limb as well as of the eyes. A horse with a thick loaded shoulder often makes a good hack, while a very thin one is seldom fit for long journeys. One point about the shoulder is very desirable—namely, the proper development of the broad part of the blade, without which

there is nothing to hold back the saddle, and the rider is far too much over his horse's neck. The gallop in this kind of riding-horse is not so important as the trot and walk, but it should be true —that is to say, it should be as high before as behind; for in default of this proper balance between the fore and hind-quarter the amount of fatigue is greatly increased. But as in the present state of our roads the gallop ought not to be persisted in for many miles, so it is of less consequence than the trot, which is, or should be, the regular pace on hard ground. The canter is not much used by gentlemen, being more fit for ladies, as it rapidly wears out the leading leg when much weight is carried. A cantering hack therefore is not much sought after for any but ladies' service. The hand-gallop is usually about 15 or 16 miles an hour, and the sides of the road should always be selected.

In the Mode of Procuring there is little choice, few people who use hacks having the opportunity of breeding them; nor if they had the necessary land, &c., would they find it answer. The hack is a mongrel animal, and can seldom be bred with certainty; because as now used he is an exceptional case, being nothing but an accidentally small hunter or racehorse. Hence, if a hack mare is bred from, with the intention of rearing a hack, the chances are that she produces an animal as high as her mother, who was probably a slapping huntress. Our hacks are now all bred from the thorough-bred sire, crossed with some harness or hunting-mare, generally the latter; and, as these are now of blood derived almost entirely from the thorough-bred horse, the hack is even more pure than his dam; he is nevertheless a mongrel, and often with a cross of Welsh or Norman blood, which renders him hardy, but still more mongrel or impure. Purchase therefore is the only mode open to the intended horseman, and there are plenty of dealers from whom these animals may be procured, independently of the numerous fairs held in our provincial towns. A respectable dealer's stable is the best mart—far better than a fair, where no good trial can be had, and where the horse, being made up for a particular time, can be more easily made to take in a purchaser. In the dealer's stable no notice is given, and he cannot be always prepared for deception. Besides, it is much more difficult to detect unsoundness of the eyes in the open air than at the stable-door; and many lame horses also are rendered for the time quite sound by constantly keeping them going up and down a fair. Spavins are particularly likely to be passed over in this way, as well as broken wind, which may be to a certain extent made up by artificial means.

Buying hacks at the hammer is a complete lottery, for they may be very unpleasant to ride, although with all the appearance of going smoothly and safely. Harness horses may be bought with far more certainty in this way, but those which I am now considering require such very perfect action that they cannot be calculated on except by a trial in the saddle. Neither can the mouth be examined with reference to the bit, although the age can be ascertained with tolerable precision. A tender mouth is a great advantage, and its opposite as great a nuisance; yet this cannot be discovered in this mode of dealing, and therefore I should advise its adoption with great reluctance

Sect. 2.—Accoutrements and Aids.

The Saddlery for Hacking is very similar to that described under the head of "Riding to Hounds" (page 521), as also are the aids. The whip, however, is of a different description, being either a straight whip like that used in racing, or a common short walking-stick, or a short cane with a handle, sold for the purpose. Spurs are not commonly used in hacking unless the horse is sluggish; but some are never to be depended upon without this stimulus, being so indolent as to stumble at every few yards without the spur, whereas on its slightest touch they are all alive, their action changing in a moment. With such animals the spur should always be worn, though it need seldom be used.

Sect. 3.—Mounting and Dismounting.

The Directions for Mounting are generally given as if all horses were of moderate height, and all men six feet in their stockings. Thus, Captain Richardson advises as follows: "Stand opposite the near fore-foot of the horse, place the left hand on the neck near to the withers, having the back of the hand to the horse's head, and the reins

lying in front of the hand. Take up the reins with the right hand, put the little finger of the left hand between them, and draw them through until you feel the mouth of the horse ; turn the remainder of the reins along the inside of the left hand, let it fall over the fore-finger on the off-side, and place the thumb upon the reins. Twist a lock of the mane round the thumb or fore-finger, and close the hand firmly upon the reins. Take the stirrup in the right hand, and place the left toe in it as far as the ball ; let the knee press against the flap of the saddle, to prevent the point of the toe from irritating the side of the horse ; seize the cantle of the saddle with the right hand, and, springing up from the right toe, throw the right leg clear over the horse, coming gently into the saddle by staying the weight of the body with the right hand resting on the right side of the pommel of the saddle ; put the right toe in the stirrup." Now this is in the main applicable to a man of 5 feet 10 inches, or 6 feet, but to a shorter individual attempting to mount a horse of 15 hands 3 inches it is an impossibility, simply because he cannot reach the cantle from the same position that enables him to hold the stirrup in the left hand. The Captain is also wrong, in my opinion, in directing that the body should be raised directly from the ground into the saddle by one movement. This will bring the rider down into the saddle with a very awkward jerk. The proper direction is to raise the body straight up till both feet are on a level with the stirrup-iron ; *then*, with the left leg held against the flap of the saddle and the left hand on the pommel, the right leg is easily thrown over the cantle ; and the body may be kept in the first position until the horse is quiet, if he is plunging or rearing. A short man can generally place his foot in the stirrup while held in his hand ; but it should be known that all cannot do this, because I have seen young riders much vexed at finding that they could not possibly do what is directed. Most of our writers on horsemanship are of the military school and endeavour to cut every one's cloth by their own coats. They are able to do certain things easily, and so are their men, because they are mostly of the height already specified ; but as sportsmen and civil equestrians are of all heights, I shall endeavour to accommodate my remarks to all heights and classes.

In all cases the rider should stand at the shoulder. With a short man it is much easier to mount a tall horse from the hind-quarter, but the danger of kicking is very great ; and even in mounting with "a leg," in the jockey style, I have known the thigh very nearly broken by a kick. If the hand *can* steady the stirrup it should do so, but if the person is too short, it can be placed in the stirrup without its aid ; then taking the reins between the fingers, much as directed in the passage already quoted, and grasping a lock of the mane with the finger and thumb, the body is raised till the right foot is brought to a level with the left, when the right hand seizes the cantle, and with the left grasping the pommel the body is steadied for a short time, which in the ordinary mount is almost imperceptible, but in a fidgety horse is sometimes of considerable length. The leg is now thrown gently over the saddle (the right hand being withdrawn as the leg reaches it), after which the body sinks into the saddle in an easy and graceful manner. The right foot is then placed in the stirrup, with or without the aid of the right hand.

Dismounting.—First bring the horse to a standstill ; then shorten the left hand on the reins till it lies on the withers, with a steady feel of the mouth ; twist a lock of the mane on the finger, and hold it with the reins, bearing also on the pommel with the heel of the hand. Next, throw the right foot out of the stirrup, and lift the body, steadied by the left hand and borne by the left foot, until it is raised out of the saddle ; throw back the right leg gently, and as it passes over the cantle grasp this with the right hand ; then lower the body gently to the ground by the aid of the two hands and the left foot, or (if it is a very short person and a tall horse) by raising the body out of the stirrup on the hands, and dropping to the ground by their aid alone.

Mounting without Stirrups, while the horse is standing still, is effected as follows :—The rider stands opposite the saddle and takes hold of both the pommel and the cantle, keeping the reins in the left hand at the same time, and in the same manner as in ordinary mounting. Now spring smartly from

the ground, and by means of the spring, aided by the arms, raise the body above the saddle; then twist the leg over, whilst the right hand is shifted to the right side of the pommel, and by means of both the hands the body is steadied into the saddle. When the horse is going on, mounting without stirrups may be effected by very active men much in the same way as is seen in the circus. The rider, running by the side of the horse, lays firmly hold of the pommel with both hands, and allows himself to be dragged along for two or three very long steps, then suddenly springs from the ground and is drawn into the saddle. This feat is seldom achieved by ordinary equestrians; but it is easier than it looks, and in riding to hounds is sometimes of great service with a fidgety horse.

DISMOUNTING WITHOUT STIRRUPS requires the horse to be brought to a standstill; then, holding the reins in the left, both hands are placed upon the pommel, and by their aid alone the body is raised out of the saddle; the right leg is then thrown over the cantle, which the right hand seizes at the same moment, and the two hands lower the body to the ground.

MOUNTING AND DISMOUNTING on the offside merely require all the movements to be reversed, and, reading left for right, and right for left, all the previous directions are applicable. It is very useful sometimes to be able to effect this, as some horses with defective eyes will more readily allow mounting on the off-side than on the left.

SECT. 4.—MANAGEMENT OF THE SEAT AND REINS.

THE SEAT is the first thing to be settled, and it should always be fixed before anything else is done—that is, as soon as the body is placed in the saddle. There are four things necessary to be attended to—first, the position of the weight, so as to be sufficiently forward in the saddle; secondly, the fixing of the knees on the padded part of the flap; thirdly, the proper length and position of the stirrups; and fourthly, the carriage of the body. The weight of the body (which is chiefly thrown upon the breech) should be well forward, because the centre of motion is close to the middle of the saddle. If the seat is far back, the weight is placed near the cantle instead of in the central position; but by sitting well forward it is distributed between the breech, thighs, and feet; and the horse is able to rise and fall in his gallop without disturbing his rider. The knees must be well forward to effect this seat, and also well in front of the stirrup-leathers; for if they are placed behind them the body is thrown too far back, and the hold is insecure. The object of all young riders should be to get as far forward as possible, so that the knee is not off the saddle; and they can scarcely overdo this part of the lesson by any effort in their power. Riding well upon the fork, with the knees upon the padded part of the flap, will ensure a good position if the stirrups are not too short. These should be of such a length as to touch the projecting ankle-bone when the legs are placed as above directed, but out of the stirrups; and when the feet are in them, the heels should be about one inch and a half below the ball of the foot. This latter part receives the pressure of the stirrup in road-riding, but in hunting or any other kind of field-riding the foot is thrust "home" and the stirrup touches the instep, whilst the pressure is taken by the under part of the arch of the foot. The reason of this is, that in leaping the pressure on the stirrup is almost lost; and if the toe only is placed within it the foot is constantly coming out. Besides this, in the gallop the attitude is of that nature that the spring of the instep is not wanted, the weight being too much thrown upon the foot if standing in the stirrups; and if sitting down in the saddle the feet should scarcely press upon the stirrups at all; therefore the best place for them is where they will be most secure.

The body should be carried easily, balancing backward and forward or sideways, as required, but not forcibly. Instinct is here the best guide, and the rider should follow its precepts rather than attempt to follow any preconceived rule. If the horse rears, his rider will feel called upon by nature to lean forward; and he may even grasp the neck if needful, or anything but the bridle, which will only bring the horse back upon him. The body should not be held *stiffly* upright, but, short of this, it can scarcely be too

still, the loins being slightly arched forwards. The legs also should be as motionless as possible, and nearly perpendicular from the knee downwards; but, if anything, a little forward, the heel being well depressed and the toes very slightly turned outwards. The shoulders should always be square—that is, at right angles to the road taken; and, whether trotting or galloping, neither shoulder should be advanced before the other.

THE REINS are to be taken up as soon as the seat is settled, and during that operation, with a young horseman, the horse should be held quiet by the groom, who stands on the off-side with both snaffle-reins in his right hand; or, if very fidgety, he may stand in front of the horse, with a snaffle-rein in each hand; this almost always keeps quiet any but a thoroughly vicious horse. In gathering the reins up, they are first raised by the right hand, and then placed in the left.

THE SINGLE REIN is held by placing all but the forefinger between the reins, and then, turning them over that finger towards the off-side, they are held firmly between it and the thumb. By this mode the hand has only to be opened, and the ends of the rein may be laid hold of by the right hand, to enable the left to shorten its grasp. When the hand is thus closed upon the rein, the thumb should be pointed to the horse's ears, the little finger near upon the pommel of the saddle, and the elbow close to the side, which last is a necessary consequence of the above position of the hand; so that the equestrian has only to look to this point and see that the thumb points to the ears, with the little finger down on the pommel, and he may be quite sure that his elbow is right.

If the hand is held as in the sketch here given, the elbow is almost sure to be thrown from the side, and the attitude is therefore unsightly; besides which there is less control over the mouth by the action of the wrist. With the single rein the management of the mouth is easy enough; nevertheless, there are various directions for the purpose adopted in different schools, which are dependent upon altogether conflicting principles. Every tyro knows that the horse turns to the left by pulling the left rein, and to the right by pulling the opposite one; and the problem to be solved is to do this by one hand only. Now this in the single rein is easily effected by raising the thumb towards the right shoulder when the right rein is to be pulled, or by drawing the little finger towards the fork for the left; in both cases by a turn of the wrist without lifting the whole hand. But over and above this action on the mouth, and in many cases independent of it, is a movement which, in trained horses, is capable of much greater delicacy, and which depends upon the sensibility of the skin of the neck for its due performance. It is effected by turning the whole hand to the right or left *without any wrist action*, so as to press the right rein against the neck, in order to cause a turn to the left, and the left rein against the neck for the opposite purpose; at the same time rather slackening the reins so as not to bear upon the mouth by so doing. In this way a horse may be "cantered round a cabbage leaf," as the dealers say, with a much greater degree of nicety and smoothness than by acting on the corner of his mouth. But highly-broken horses, such as the military troop-horses, are often too much used to their bits to answer to this slight and delicate manipulation; and therefore it is eschewed by Captain Richardson, as well as by Colonel Greenwood, but strangely enough for opposite reasons, and each attempting to substitute a very different process for it. I am well aware that some horses can never be taught it, but must always have the bearing on the mouth before they will turn; yet when it can be taught, it makes the animal so tractable and agreeable to ride that it is a highly desirable accomplishment; and I cannot therefore join in condemning its use, but should rejoice if it could in all cases be fully developed.

THE DOUBLE-REIN is held in two ways, but the best, in my opinion, is

as follows :—First take up the snaffle-rein, and place it as before, except that the left rein is to be between the ring and middle fingers; then raise the curb-rein, and hook it on to the little finger, where it may be either left for use when wanted, or at once drawn over the fore-finger to the proper degree of tightness and pressed down upon it by the thumb; in which case the reins should all fall over the off-side of the horse. By this mode the curb-rein is always at the command of the right hand, and it may be shortened or let out in a moment, which is of constant occurrence in every day's ride. The hand is held as before, with the thumb pointing to the horse's ears; in turning, however, there is much less power of bearing on either side of the bit by raising the thumb or lowering the little finger, because the distance between the snaffle-reins is only half what it was; therefore the mode of turning by pressure upon the neck is doubly desirable, and hence its constant adoption in all cases where double-reined bridles are used, as in the field and on the road. Sometimes, to obviate this objection, the snaffle-reins are placed as in the single-reined bridle, outside the little finger, and then the curb is hooked over the ring-finger, between the snaffle-reins, so as to allow of the full manipulation of the mouth by the hand, without bearing upon the neck. But the objection to this is that the curb cannot be shortened without releasing the snaffle, and therefore the horse must either be ridden on the curb alone whilst this process is being effected, or his head must be loosed altogether, whereas in the other mode his mouth is still under the control of the snaffle all the time that the curb is being let out or taken in.

Sect. 5.—The Ordinary Paces.

The Walk is a perfectly natural pace to the horse, but it is somewhat altered by use, being quicker and smarter than before breaking, and with the hind-legs brought more under the body in the perfect hack. In this pace the head should not be too much confined, and yet the rider should not entirely leave it uncontrolled; the finest possible touch is enough, so that on any trip the hand is at once informed of it by the drop of the head, when, by a sudden jerk of the bridle, not too forcible, it rouses the horse, and prevents his falling. It is not that he is kept up by pulling the rein, but that he is roused by it and made to exert himself; for many horses seem regardless of falls, and would be down twenty times a day if they were not stimulated by the heel and bit. Confinement of the head in the walk is absolutely injurious, and more frequently causes a fall than saves one. A good walker will go on nodding his head to each step, more or less as it is a long or a short one; and if this nodding is prevented by the heavy hand of the rider, the fore-foot is not properly stretched forward, the step is crippled, and very often the toe strikes the ground, whereas if the head were at liberty it would clear it well. In horses which are apt to stumble on the walk, I have generally found that a loose rein, with the curb held ready for a check, is the safest plan; and then the horse soon finds that he is punished the moment he stumbles, and in a very short time he learns to recover himself almost before he is reminded. I do not like the spur or the whip so well, because the use of either makes the horse spring forward and often blunder again in his hurry to avoid this kind of punishment. The check of the curb, on the other hand, makes him recover himself without extra progress, or rather by partially stopping him, and thus he is better able to avoid his fall. The body is allowed to yield slightly to the motions of the horse, but not to waddle from side to side, as is sometimes seen. Some horses do not stir the rider at all, while others throw him about and fatigue him greatly; and this may generally be foretold when the tail sways much from side to side in the walk, which is caused by the over-long stride of the horse—a very desirable accomplishment in the racehorse or hunter, but not in the hack.

The Trot is altogether an acquired pace, and in the natural state it is never seen for more than a few yards at a time. In it the fore and hind-legs of opposite sides move together, and are taken up and put down exactly at the same moment.

To Start a Horse in the Trot, take hold of both the reins of the snaffle, and bear firmly, but steadily,

upon the mouth, lean slightly forwards in the saddle, press the legs against the horse's sides, and use the peculiar click of the tongue, which serves as an encouragement to the horse on all occasions. If properly broken, he will now fall at once into the trot, but if he breaks into a canter or gallop, he must be checked, and restrained into a walk, or a very slow trot, called a "jog-trot." In some cases, a horse can canter as slowly as he walks, and here there is often great difficulty in making him trot, for no restraint, short of a total halt, will prevent the canter. In such cases, laying hold of an ear will often succeed, by making the animal drop his head, which movement interferes with the canter, and generally leads to a trot.

Rising in the Stirrups with the trot is generally practised in civil life, as being far less fatiguing to both horse and rider; but in the military schools the opposite style is inculcated, because among a troop of horse it has a very bad effect when a number of men are bobbing up and down, out of all time. If it were possible for all to rise together, perhaps the offence against military precision might be pardoned; but as horses will not all step together, so the men cannot all rise at the same moment, and the consequence is that they are doomed to bump upon the sheep-skins in a very tiresome manner, fatiguing alike to man and horse. The civilian's mode is as follows:—At the precise moment when the hind and fore-legs are making their effort to throw the horse forward in progression, the body of the rider is thrown forcibly into the air—in some horses to so great an extent as to make a young rider feel as if he never would come down again. After reaching the utmost height, however, the body falls, and reaches the saddle just in time to catch the next effort, and so on as long as the trot lasts. In this way the horse absolutely carries no weight at all during half his time, and the action and reaction are of such a nature that the trot is accelerated rather than retarded by the weight. No horse can fairly trot above 12 or 13 miles an hour without this rising, though he may run or pace in the American style; so that it is not only to save the rider's bones, but also to ease the horse, that this practice has been introduced, and has held its ground in spite of the want of military sanction. Here, as with the seat, utility is sacrificed to appearances; and whenever the long and weak seat of the barrack-yard supplants the firm seat of the civilian, I shall expect to see the rising in the trot abandoned, but certainly not till then. The military length is not now what it was forty years ago; and perhaps some time or other they may adopt the rise, but I am afraid not until they have produced many thousands more sore backs than they need have done.

In the Trot the foot should bear strongly on the stirrup, with the heel well down, and the ball of the foot pressing on the foot-piece of the stirrup, so that the elasticity of the ankle takes off the jar, and prevents the double rise which in some rough horses is very apt to be produced. The knees should always be maintained exactly in the same place, without that shifting motion which is so common with bad riders, and the legs should be held perpendicularly from the knee downwards. The chest well forward, the waist in, and the rise nearly upright, but slightly forward, and as easily as can be effected without effort on the part of the rider, and rather restraining than adding to the throw of the horse.

The Military Style, without rising, is effected by leaving the body as much as possible to find its own level. The knees should not cling to the saddle, the foot should not press forcibly upon the stirrup, and the hands should not bear upon the bridle. By attending to these negative directions, the rider has only to lean very slightly back from the perpendicular, and preserve his balance, when practice will do all the rest.

The Canter is, even more than the trot, an unnatural and artificial pace. It can seldom be taught without setting a horse much upon his haunches, and very rarely indeed without the use of the curb-rein. It is a pace in which all the legs are lifted and set down one after the other in the most methodical manner; the near or off fore-leg leading off, as the case may be, but one foot being always in contact with the ground.

To Start the Canter with either Leg it is necessary to pull the opposite rein, and press the opposite heel. The reason of this is obvious enough; every horse in starting to canter (and many

even in the canter itself), turns himself slightly across his line of progress, in order to enable him to lead with that leg which he thereby advances. Thus, supposing a horse is going to lead off with the off fore-leg, he turns his head to the left and his croup to the right, and then easily gets his off-leg before and his near leg behind into the line which is being taken. Now, to compel him to repeat this action, it is only necessary to turn him in the same way, by pulling his head to the left, and by touching him with the left heel, after which he is made to canter by exciting him with the voice or whip, whilst at the same moment he is restrained by the curb. When once this lead is commenced, the hold on the curb and pressure on the legs may be quite equal; but if, while the canter is maintained, it is desired to change the leading leg, the horse must be collected and roused by the bit and voice; and then reversing the pull of the reins and the leg-pressure from that previously practised, so as to turn the horse in the opposite way to that in which he was started, he will generally be compelled to change his lead, which is called "changing his leg."

THE SEAT FOR THE CANTER is a very easy one, the knees taking a very gentle hold of the saddle, the feet not bearing strongly upon the stirrups, and the body tolerably upright in the saddle. The hands must not be too low in this pace, but should keep a very gentle but constant pressure upon the bit, and should, if there is the slightest tendency to drop the canter, rouse the mouth by a very slight reminder, and also stimulate the fears by the voice or whip.

THE GALLOP is the most natural of all paces, being seen in all horses while at liberty, from the Shetland and dray-horse to the pure-bred racehorse. It is a succession of leaps, and differs from the canter in one important feature, which separates the one pace from the other. In the description of the latter pace I have said that one foot is always in contact with the ground; whilst in the gallop, whether fast or slow, there is always an interval in which the whole animal is suspended in the air without touching the ground. Hence, it is not true that the canter is a slow gallop, nor is the gallop a fast canter; but the two are totally distinct paces, as different as walking and running in the human subject. There is, however, the same variation in the leading leg, and the same mode of compelling the lead of one particular leg, as well as of causing the change of lead, though it is much more difficult to effect these objects in the faster pace than in the slower one.

THE PROPER SEAT IN THE GALLOP is either to sit down in the saddle or to stand in the stirrups, according to circumstances. The former is the usual seat, and it is only in racing or in the very fast gallop at other times that the latter is adopted. In sitting down, the feet may be either resting on the ball of the toe, as in the other paces, or with the stirrup "home" to the boot, as is common in all field-riding. The body is thrown easily and slightly back, the knees take firm hold, the rider being careful not to grip so tight as to distress the horse—which fault I have known very muscular men often commit. The hands should be low, with sufficient pull at the mouth to restrain him, but not to annoy and make him "fight"; and if he is inclined to get his head down too much, or the reverse, they must be raised or lowered accordingly. When the standing in the stirrups is to be practised, the weight is thrown upon them, steadying it with the knees, which should keep firm hold of the saddle-flaps. The seat of the body is carried well back, while at the same time the loin is thrown forwards; but by this combined action the weight is not hanging over the shoulder of the horse, as it would be, and often is, when the breech is raised from the saddle and brought almost over the pommel, with the eyes of the rider looking down his horse's forehead, or very nearly so. If a jockey with a good seat is watched, it will be seen that his leg does not descend straight from the knee, but that it is slightly thrown back from that line, and consequently that his centre of gravity is behind it, so that he can, by stiffening the joint, carry his body as far behind it as his stirrup is, without ceasing to stand in it. This seat cannot long be maintained without fatigue to the rider, and it is only adopted in racing or in short gallops over bad ground, as in hunting, when there is a deep piece of fallow, or a steep hill, or any other

kind of ground calculated to tire the horse.

THE VARIETIES OF THE GALLOP are the hand-gallop, the three-quarter gallop, and the full gallop, which is capable of still further extension in the "racing set-to." They are, however, modifications of the same pace, varying only in the velocity with which they are carried out.

SECT. 6.—VICES AND MANEGE MOVEMENTS.

Besides the paces of the horse which are required for his use by man, there are also certain movements very commonly met with, but by no means desirable, and others which are taught him for man's extraordinary purposes; the former are called vices, the latter are more or less the result of the *manége*, or breaking-school. The vices are—first, stumbling; secondly, cutting and rearing; thirdly, shying; fourthly, kicking; fifthly, plunging; sixthly, lying down; seventhly, shouldering; and eighthly, running away. The *managed* actions are backing, passaging, &c.

STUMBLING is caused by defective muscular action in all cases, though there is no doubt that in many horses this defect is aggravated by lameness, either of the feet or legs, or from defective shoeing. Some horses can never be ridden in safety for many miles, although they will "show out" with very good action; and this is caused by the muscles that raise and extend the leg tiring very rapidly, after which the ground is not cleared by the toe, and when it is struck *there is not power to recover* from the mistake. Many careless and low goers are constantly striking their feet against stones, but having strong extensors they draw their feet clear of the obstacle, and easily recover themselves· whilst those which are differently furnished, although they strike with less force, yet have no power to help themselves, and therefore they fall. The one kind may be kept on their legs by constant rousing and severity, but the weak ones are never safe. In the stumbling from lameness or soreness, the most humane course, as well as the safest, is either to dismount and lead the horse, or to keep him alive by the use of the whip or spur. Humanity taking a middle course by riding quietly is sure to lick the dust; and the plan should never be attempted.

There are many kinds of careless stumbling. One arises from the toe touching, although well thrown over, but the knee-action being low, the foot is not cleared. This is not a very dangerous kind, and is generally recovered from. The next is from the foot being put down too far back, and too much on the toe, so that the pastern, instead of settling into its proper place behind the perpendicular of the foot, "knuckles over" in front, and so causes the leg to lose its power of sustaining the weight. Here the horse does not generally fail unless the other leg follows suit; but it is a very unpleasant accident, and if a horse is liable to it he is never to be considered safe. Such animals are very deceptive to the young and inexperienced, because they generally lift their knees high, and lead to the supposition that they are safe and good goers. But if they are watched they will be seen to put their feet down behind a perpendicular line drawn from the front of their knees; and when that is the case the kind of stumbling here alluded to is always to be expected. There is also the stumbling from putting the foot on a rolling stone, which gives way at the moment of bearing the weight, and thus throws the horse off his balance, so as to occasion him to make a mistake with the other leg, which will be greater or less according to his good or bad action. Lastly, there is a stumble resulting from tender soles or frogs, in which, when the feet are placed upon a sharp stone, so much pain is occasioned that the knee is allowed to give way; and the same effect is produced as in the accident caused by a rolling stone, but often in a much more marked degree.

THE REMEDY FOR STUMBLING will, in all cases, depend upon the cause. If this is from weakness, no care or good riding will prevent a stumble, though it may avert an absolute fall by taking care to sit well back, and to be on the guard against being pulled over the shoulder in case of a serious mistake. There is no use in holding a horse hard in such a case; he should be kept alive but not hurried, because the more tired he is the more likely he is to come down. Great judgment, therefore, will be necessary to "nurse him" to his journey's end; and this will be

best done by an occasional relief to his back and walking by his side. No one should ride such a horse habitually; but if, unfortunately, one finds himself on him, and some miles from home, the above is the best course to pursue. When, however, the stumbling is from decided laziness, the only course is to catch hold of the horse's head and use the whip or spur, or both, pretty severely. Many horses are quite safe at their top speed on the trot, but at a half-trot they are never to be trusted. The experienced horseman readily detects the exact pace which his horse can do with the greatest ease and safety, and keeps him to that. Some can trot down hill safely, but are always tripping on level ground (these are low-actioned horses, with pretty good shoulders); others, again, always trip going down hill from over-shooting themselves; and of course each must be ridden accordingly. When lameness is the cause of failure, the remedy is either to have the shoe taken off and rectified, if that is the cause, or if in the joints, ligaments, or sinews, to give rest and adopt the proper remedies.

Cutting is caused by the horse touching one leg with the other shoe or foot, and it may be either of the ankle or pastern joint, or of the inside of the leg, or just below the knee, which last is called the *speedy cut*. It arises from the legs being set on slightly awry, so that the action is not straightforward; and this is aggravated by weakness or want of condition, so that a horse often cuts when poor, though he is quite free from the vice when high in flesh. The cutting may be either of the fore or hind-leg. The remedy is either to alter the shoeing or to apply a boot.

Rearing is a coltish trick which is generally lost as the horse grows older; it is not nearly so common now as it used to be, and a bad rearer is not often seen. When in an aggravated form it is a frightful vice, and with an inexperienced rider may be attended with fatal mischief. In slight cases it consists in the horse simply rising a little before and then dropping again, as if from play only; but in the worst form of the vice it is a systematic attempt to throw the rider, and sometimes the horse goes so far as to throw himself back as well.

The Remedy for Rearing is the martingale, which may either be used with rings running on the snaffle-rein, or attached directly to that bit by the ordinary billet and buckle; or, again, by means of a running-rein, which commences from the breast-strap of the martingale, and then running through the ring of the snaffle with a pulley-like action, it is brought back to the hand; and it may thus be tightened or relaxed according to circumstances, so as to bring the horse's head absolutely down to his brisket, or, on the other hand, to give it entire liberty without dismounting. It is a very good plan with an experienced horseman, but its use should not be attempted by any other. With a determined brute nothing short of this last kind will prevent rearing; and even it will fail in some cases, for there are some horses which rear with their heads between their fore-legs; but happily they are rare exceptions, and with the majority the martingale in some form is efficacious. It should never be put on the curb-rein with rearers, and, indeed, a curb is seldom to be used at all with horses addicted to that vice; they are always made worse by the slightest touch of the bit. Unless they are very much inclined to run away, it is far better to trust to a straight bit or plain snaffle, which by not irritating the mouth will often induce them to go pleasantly, whereas a more severe bit would tempt them to show their temper by rearing. Breaking a bottle of water between the ears, or a severe blow in the same part, may in some cases be tried, but the continued use of the martingale will generally suffice. There is also a mode of curing rearers sometimes attempted, by letting them rise, and then slipping off on one side and pulling them back; but it is a dangerous feat for both horse and rider, and has often led to a broken back on the part of the horse, as well as sometimes to severe injury to the rider. It is scarcely necessary to remark that the rider should in all cases lean well forward, and relax the bridle while the horse is in the air.

Shying is sometimes the effect of fear, and sometimes of vice; and there are many horses which begin by the former and end with the latter, in consequence of mismanagement. The young colt is almost always more or less shy, espe-

cially if he is brought at once from the retired fields where he was reared to the streets of a busy town. There are, however, numberless varieties of shyers, some being dreadfully alarmed by one kind of object which to another is not at all formidable. When a horse finds he gains his object by turning round, he will often repeat the turning without cause, pretending to be alarmed, and looking out for excuses for it. This is not at all uncommon, and with timid riders leads to a discontinuance of the ride, by which the horse gains his end for the time, and repeats the trick on the first occasion. In genuine shying from fear, the eyes are generally more or less defective. Sometimes, however, the cause is founded upon a general irritability of the nervous system; thus, there are many which never shy at meeting waggons, or other similar objects, but which almost drop with fear on a small bird flying out of a hedge, or any other startling sound. These are also the worst, because they give no notice, whereas the ordinary shyer almost always shows by his ears that he is prepared to turn.

For Shyers the only remedy is to take as little notice as possible, to make light of the occurrence, speak encouragingly, yet rather severely, *and to get them past the object somehow or other.* If needful, the *aid* of the spur and whip may be called in, but not as a *punishment.* If the horse can be urged past the object at which he is shying without the whip or spur, so much the better; but if not, he must be compelled to do so by their use. Whenever fear is the cause of shying, punishment only adds to that fear; but where vice has supplanted fear, severity should be used to correct it. As a general rule the whip never need be used, unless the horse turns absolutely round; and not then, unless there is reason to suspect that he is pretending fear. If he will but go by the object, even with "a wide berth," as the sailors say, he may be suffered to go on his way unpunished; and nothing is so bad as the absurd severity which some horsemen exercise after the horse has conquered his reluctance, and passed the object. At this time he should be praised and patted, with all the encouragement which can be given; and on no account should he be taught to make those rushes which we so commonly see on the road, from the improper use of the whip and spur. If punishment is necessary at all it must be used beforehand; but it often happens that the rider cannot spare his whip-hand until the shying is over; and then, in his passion, he does not reflect that the time is gone by for its employment.

Kicking is a very unpleasant vice, either in the saddle or in harness, but it is not so dangerous in the former as in the latter. Its nature is too well known to need description. It is often the result of play, but quite as frequently it arises from a vicious desire to get rid of the rider. The proper mode of treating a kicker is to catch fast hold of the head, and keep it well up, and then to use the whip severely down the shoulder. If the head is not well in hand, he will often kick the more, but if the head is kept up while the blow is given, he will generally desist. A gag-snaffle is very useful with confirmed kickers, as it serves to keep the head up better than any other bit.

Plunging consists in a series of bounds or springs, by which the horse evidently hopes to relieve himself of his burden. His back is generally rounded, and very often he will "buck," or jump off the ground perpendicularly, by which a weak rider is sure to be unseated. The remedy is to sit still, and keep the head confined, though not too closely. Very often plunging is followed by a fit of kicking, for which the rider should be prepared. If there is reason to expect that a horse will commence this trick, a cloth, rolled like a soldier's cloak, and buckled to the front of the saddle, is a great assistance, and will often save a fall when the seat is not very good.

Lying Down is a vice which only Welsh ponies, and other obstinate brutes, indulge in, and it is seldom met with in English-bred horses. The spur will sometimes keep them up; in bad cases, however, there is no remedy but submission.

Shouldering is also a trick usually only met with among badly-bred horses, though sometimes horses of all breeds, if they have been badly broken, will adopt this expedient, by attempting to crush the knee against a wall or paling. If, however, the hand and foot are put strongly out, the horse cannot use enough lateral pressure to overcome their resistance, and no harm is done.

RUNNING AWAY is only an extreme form of pulling in the gallop, but sometimes it is of a most vicious description, and the horse gallops as if maddened by excitement. It is a most dangerous vice, as it is generally practised at times when it is most inconvenient, as in crowded thoroughfares, &c.

FOR HORSES WHICH RUN AWAY various severe bits have been invented, but nothing has ever yet been introduced which is so successful as the Bucephalus nose-band, to which I have already alluded at page 523. It is a good plan in determined brutes to make them gallop to a standstill, by giving them an up-hill burster, which may generally be managed. There are some which are only made worse by this treatment; but generally it succeeds, and most horses are rendered quiet for some time by such an effort; nevertheless, they generally try again as soon as they are fresh, and they are seldom to be trusted with any riders but good horsemen. It is of no use to pull dead at these animals; it is better to let them go when there is plenty of room, and then to try what a sharp and severe pull will do—not keeping it up too long if ineffectual, but loosing the mouth again for a time, and then trying again. Sometimes, however, there is no room for this, and then the only plan is to try and bring the head round, with a view of galloping in a circle, or to run the head against a fence or even a wall or strong gate. Occasionally any course is preferable to a straight one—as, for instance, into a crowded thoroughfare, where there would be an almost positive certainty of mischief; and in such a case it is better to do anything rather than persevere in the course which the runaway is taking. Here the horse must be pulled into whatever will stop him, such as a thick hedge or a park wall, or any similar insurmountable obstacle; and all risks must be run of damaging him, or even his rider, who will however generally escape with slight bruises if the horse is run full tilt against the object, and not too obliquely, which will not at all answer the purpose.

BACKING is necessary for all horses to be taught, though not so often required in riding as in harness-horses. It is always one of the first things drilled into the colt by his breaker, and the finished and broken horse will, as a matter of course, readily obey the hand of the rider, when he gently draws him back. The pull should not be harder than the particular mouth requires, some horses being easily irritated by too severe a confinement of the mouth. If a horse obstinately refuses to stir, the bit may be gently "sawed" from side to side, which seldom fails to make him stir. When backing is adopted by the horse with vicious intentions, and contrary to the will of his master, it is called JIBBING, and is a most unmanageable trick, for which the best remedy is patience. Punishment never answers, as the horse only jibs the more; but by quietly waiting until he is tired, the animal will generally give up the fight, and proceed in the desired direction.

PASSAGING is a feat of horsemanship never used in this country except in the military schools. It is the action of the horse by which he moves sideways, using the two legs of each side at a time, and following them up, advancing them to the right or left by bringing the other two up to them

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SECT. 7.—THE RIDE.

THE RIDE is the putting into practice of all the directions which have hitherto been given. When the orders have been issued for a horse to be prepared, he is brought to the door ready saddled and bridled. It is the groom's duty to put on the saddle properly; but it is as well that the master should know how and where to place it. The common direction is to put the saddle "one hand's breadth behind the shoulder-blade;" but this is too far back, and few saddles will remain there. It is far better to place it at once where it fits than to give it room to come forward, because the girths only become more slack as it shifts, and allow it to press still more forward than it otherwise would; whereas, if it had been first placed at the spot to which it soon travelled, the girths would have kept tight, and it would have moved no further. It is best to place the saddle where it fits, taking care to have it as far back as it *will* fit. The bridle should be put on with the bit neither too high nor too low in the mouth, and with the throat-lash of the proper tightness—which points can only be learnt by experience.

After the horse has left the stable, and, if the weather is fine, been walked about for a few minutes, the girths will generally require tightening, which the groom should see to. When the horse is to be mounted, the rider, if he cannot fully depend upon his groom, should see to his girths, and that his bridle is properly put on, with the curb of the right degree of tightness, if he uses a double-reined bridle. As soon as this is settled, the groom brings the horse up to the door, holding it with the left hand by the snaffle-reins, and bearing upon the off-stirrup to resist the weight, if the rider is a heavy man, so as to prevent the saddle from twisting. The rider then mounts according to the directions given at page 742, and puts his horse into a walk, which should always be the pace for the commencement of a ride for pleasure. He may in this pace, as I have already explained, give his horse considerable liberty of the head, and he will have no difficulty in turning him to the right or left, either by the use of one hand or both, or by bearing upon the neck, according to the mode to which the horse has been broken. After a short distance he may practise the various paces, and if he is inclined to learn to ride well, he may at times throw the stirrups across the saddle, and then endeavour to canter without them.

In learning to ride without stirrups, it is a very good plan to have the inside of the trousers lined in the French fashion, with a strip of black leather, which takes a good grip of the saddle; for with cloth trousers and a smoothly polished saddle there is very little hold to be obtained, and the balance alone must preserve the seat. With this addition all the paces may soon be mastered without the aid of the stirrups; but the trot will be the last, of necessity, because it is by far the most difficult. No rise can now be managed, and the body must be suffered to take its chance upon the saddle, leaning back to rather more than the perpendicular position, and not attempting to do more than keep the balance. When riding without stirrups, the feet should be carried in the same position as if they were being used, the heel being carefully depressed, and the toes raised by the muscular power of the leg.

For directions applicable to leaping, see "Riding to Hounds," page 538.

Sect. 8.—Female Horsemanship.

The Saddlery for the use of ladies is similar in *principle* to that devoted to the gentlemen's riding, with the exception that the bits and reins of the bridle are lighter and more ornamental, and the saddle furnished with crutches for side-riding. The reins are narrower than those used by gentlemen, but otherwise the same. Until lately they were rounded, and the nose-band fringed, but such decorations are now (1875) out of fashion. A nose-martingale is generally added for ornament; but no horse which throws his head up is fit for a lady's use.

The side-saddle should be carefully fitted to the horse, and there should always be a third crutch, the use of which will hereafter be explained. There is an extra leather girth, which keeps the flaps of the saddle in their places. The stirrup may either be like a man's, with a lining of leather or velvet, or it may be a slipper, which is safer, and also easier to the foot. The lady's whip is a light affair; but as her horse ought seldom to require punishment, it is carried more to threaten, than to give, punishment. A spur *may* be added for a lady's use; and for those who hunt it is sometimes needful, for the purpose of giving a stimulus at the right moment.

The Lady's Horse ought to be the most perfect of hacks, instead of being, as he often is, a useless brute, fit only to be shot. Many men think that any horse gifted with a neat outline will carry a lady, but it is a great mistake; and if the ladies themselves had the choice of horses they would soon decide to the contrary. The only thing in their favour, in choosing horses for ladies, is that the weight to be carried is generally light, and therefore animals calculated to carry them are seldom fit to mount a man, because the weight of the male sex is generally so much above that of an equestrian lady. Few of this sex who ride are above 9st., and most are below that weight; and a horse which will be well up to 10st., including the saddle, will not be able even to waddle under 12st. But in point of soundness, action, mouth, and temper, the lady's

hack should be unimpeachable; and these are the points that constitute a perfect hack for either sex. Again, a gentleman's hack may be good, yet wholly unable to canter, and so formed that he cannot be taught; he, therefore, is unsuited to a lady; but, on the other hand, every lady's horse should do all his paces well. Many ladies, it is true, never trot; but they should not be furnished with the excuse that they cannot, because their horses will not. In size the lady's horse should be about 15 hands, or from 14½ to 15½; more than 15½ makes the horse too lofty and unwieldy for a lady's use.

In Breaking the Lady's Horse, if he is of good temper and fine mouth, little need be done but to make him canter easily, and with the right leg foremost. This is necessary, because the other leg is uncomfortable to the rider, from her side position on the saddle; the breaker, therefore, should adopt the means already described, and persevere until the horse is quite accustomed to the pace, and habitually starts off with the right leg. He should also bend him thoroughly, so as to make him canter well on his hind-legs, and not with the disunited action which one so often sees. The curb must be used for this purpose, but without bearing too strongly upon it; the horse must be brought to his paces by fine handling rather than by force, and by occasional pressure, which he will yield to and play with if allowed, rather than by a dead pull. In this way, by taking advantage of every inch yielded, and yet not going too far, the head is gradually brought in, and the hind-legs as gradually are thrust forward, so as instinctively to steady the mouth, and prevent the pressure which is feared. When this "setting on the haunches" is accomplished, a horse-cloth may be strapped on the near side of the saddle, to accustom him to the flapping of the habit; but I have always found, in an ordinarily good-tempered horse, that if the paces and mouth are all perfect the habit is sure to be borne. It is a kind of excuse which gentlemen are too apt to make, that their horses have never carried a lady; but if they will carry a gentleman quietly, they will always carry a lady in the same style, though that may not perhaps be suitable to her seat or hands.

The Direction for Holding the Reins, and for their use, already given in page 744, apply equally well to ladies; the only difference being that the knee prevents the hand being lowered to the pommel of the saddle. This is one reason why the neck requires to be more bent than for the gentleman's use, because if it is straight, or at all ewe-necked, the hands, being high, raise the head into the air, and make the horse more of a "star-gazer" than he otherwise would be. Many ladies hold the reins as in driving, the directions for which are given in the next chapter. In some respects this is better; it allows the hand to be held lower than in the gentleman's mode, and the ends of the reins fall better over the habit, but it does not allow of the wrist motion necessary for the use of one hand only.

In Mounting, the horse is brought to the door by the groom, and held steadily, as for a gentleman's use, taking care to keep him well up to the place where the lady stands, from which he is very apt to sidle away. The gentleman-assistant than places his right hand on his right knee, or a little below it, and receives the lady's left foot. Previously to this, she should have taken the rein in her right hand, which is placed on the middle crutch; then with her left on the gentleman's shoulder, and her foot in his hand, she makes a spring from the ground, and immediately stiffens her left leg, using his hand, steadied by his knee, as a second foundation for a spring; and then she is easily lifted to her saddle by the hand following and finishing her spring with what little force is required. As she rises, the hand still keeps hold of the crutch, which throws the body sideways on the saddle, and she then lifts her right knee over the middle crutch. After this she lifts herself up from the saddle, and the gentleman draws her habit from under her until smooth; he then places her left foot in the stirrup, including with it a fold of her habit, and she is finally seated, and should take her reins, and use them as directed for the gentleman. The great mistake which is constantly made in mounting is in the use of the lady's knee, which should be carefully straightened the moment it can be effected; for if kept bent it requires great power to lift a lady into the saddle, whereas with a good spring

and a straight knee she ought to weigh but a very few pounds in the hand.

The Lady's Seat is very commonly supposed to be a weak one, and to depend entirely upon balance, but this is the greatest possible mistake; and there can be no doubt, from what is seen in private as well as in the circus, that it requires as great an effort of the horse to dislodge a good female rider as to produce the same effect upon a gentleman. Even with the old single crutch there was a good hold with the leg, but now that the third is added, the grip is really a firm one. When this is not used, the crutch is laid hold of by the right leg and pinched between the calf of the leg and the thigh, so as to afford a firm and steady hold for the whole body, especially when aided by the stirrup. But this latter support merely preserves the balance, and is useful also in trotting; it does not at all give a firm steady seat, though it adds to one already obtained by the knee. When two crutches are used, the leg is not brought back so far as to grasp the crutch as before, but between the two knees the two crutches are firmly laid hold of, the upper one being under the right knee, and the lower one above the left. The right knee hooked over the crutch keeps the body from slipping backwards, whilst the left keeps it from a forward motion, and thus the proper position is maintained. In all cases the right foot should be kept back, and the point of the toe should scarcely be visible. These points should carefully be kept in view by all lady riders, and they should learn as soon as possible to steady themselves by this grasp of the crutches, without reference to the stirrup-iron. In spite of her side-seat, the body should be square to the front, with the elbow easily bent, and preserved in its proper position by the same precaution, with regard to the thumb, as in the case of her male companion, already minutely described in page 744. The whip is generally held in the right hand, with the lash pointing forwards and towards the left, and by this position it may be used on any part of the horse's body, by reaching over to the left and cutting before or behind the saddle, or with great ease on the right side. Its use may, therefore, in all cases be substituted for the pressure of the leg in the description of the modes of effecting the change of leg, turning to the left or right, or leading with either leg. With this substitution, and with the caution against all violent attempts at coercion—which are better carried out by the fine hand and delicate tact of the lady—all the feats which man can perform may well be imitated by her.

In Dismounting the horse is brought to a dead stop, and his head held by an assistant; the lady then turns her knee back again from the position between the outside crutch, takes her foot out of the stirrup, and sits completely sideways; she then puts her left hand upon the gentleman's shoulder, who places his right arm round her waist, and lightly assists her to the ground.

Sect. 9.—Ladies' Dress.

The Dress adopted by ladies varies so much with fashion, that it is useless to attempt to describe it. Of course, a riding-habit is always adopted; but it has assumed nearly every variety of length and make within the last dozen years. At the beginning of that time the skirt almost touched the ground: now it scarcely covers the feet. Then the body worn was a polka jacket, as shown on page 738; the head-dress being a cap, ending in the "pork pie," which gave way to the hat. The polka also was replaced by the tight body and basque, together with collars, &c. much on the principle of those adopted by the male sex. For these reasons I shall not attempt to describe the minute details of ladies' dress for the saddle as at present used.

DRIVING TANDEM IN GOING TO COVERT.

CHAPTER V.

DRIVING.

SECT. 1.—VARIETIES OF CARRIAGES.

CARRIAGES used for pleasure, as distinguished from stage and hired carriages, are of numerous kinds, and have received an immense number of distinguishing names, some of which are only in vogue during a short reign, while others are long favourites of the driving public. The chief division is fourfold—first, two-wheeled open carriages; secondly, two-wheeled headed carriages; thirdly, four-wheeled open carriages; and fourthly, four-wheeled close carriages.

TWO-WHEELED OPEN CARRIAGES.

The kinds used by private parties are—the Dog-Cart, the Dennet Gig, the Tilbury, the Inside and Outside Irish Car.

IN THE DOG-CART (*fig.* 1), the body of which is more or less square, with two seats back to back, there is a large

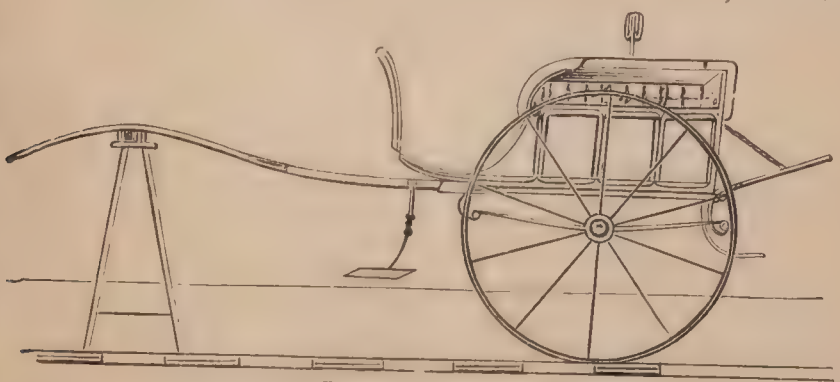


FIG. 1.—THE DOG-CART.

boot capable of taking dogs or luggage, and hence its general usefulness in the country. The springs are generally a single long side-spring, and the shafts are usually of lance-wood. They are made to shift the balance in case of

their being used by two persons only, for which purpose various contrivances are adopted.

In the Dennet (*fig.* 2) and the Stanhope gig—which latter is now almost exploded on account of its weight, and its so severely trying the back and legs of the horse—there is only room for two persons. The seat is generally rounded at the angles, and either railed or panelled; and the boot is plain and small as compared with the dog-cart. In the peculiar principle first introduced by Fuller, of Bath, the shafts are of

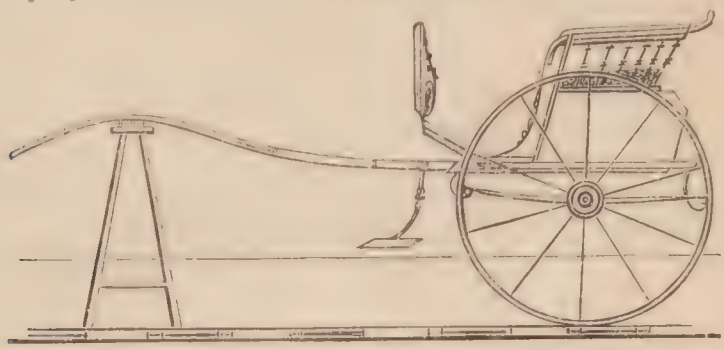


Fig. 2.—the dennet.

lance-wood often combined with whalebone, and the knee-motion derived from the horse is almost totally got rid of. Upon this depends the comfort of all two-wheeled vehicles, and especially where two persons only are accommodated; for in many old-fashioned Dennets the motion was worse than any high-trotting horse. The shaft is tapered at the back-end and attached to a cross-spring, so that the fulcrum at the drawing-bar is in the centre of two long springs—one between it and the horse's pad, the other between it and the back of the gig; and as they play easily, the two fixed points at the fulcrum and the back remain stationary. When properly balanced, this gig ought not to press upon the horse's back on level ground more than a few ounces, or just sufficient to prevent its bearing back, and thus straining the belly-band, and fretting the horse in that way.

The Tilbury is a gig of a totally different construction, and, being suspended upon leather braces, its motion is much softer than the Dennet; but what it gains in this respect it loses in knee-motion, which is very considerable. There is no boot, but a skeleton body is attached to a plated and therefore rigid shaft, by means of a spring projecting in front, and attached by a brace, and another projecting behind suspended to a cross-spring by a long leather brace. This cross-spring is raised from the cross-bar at the back of the shafts by iron stays in a T-like form; and it was supposed when it was first invented that the leather brace would allow of the shaft moving with the horse without influencing the gig. This hypothesis, however, has not proved to be consistent with the fact, as the Tilbury is found to receive a most uncomfortable motion from the horse, and to communicate it to the rider; and no plan has yet been discovered by which this can be remedied. By setting the cross-spring well back, and thus straining the braces apart, some improvement is effected; but it is still a very uneasy gig as compared with Fuller's Dennet, which has maintained its superiority for the last fifty years, although hard pressed by the cheap substitutes which have been extensively adopted in its place, in the shape of dog-carts, &c.

In the Irish Car the passengers are placed opposite one another in the inside car, and back to back in the outside variety, but in both cases sideways as regards the line of progress. These cars were formerly a good deal used in this country, but now they are almost entirely superseded by the various dog-carts.

Besides the above two-wheeled carriages there are several varieties of the dog-cart, as the Whitechapel, the Malvern, the Croydon basket-cart, &c.

TWO-WHEELED HEADED CARRIAGES.

These consist of the Cabriolet, the Hansom Cab, the Nottingham Cottage-cart, and the Headed Dennet.

THE CABRIOLET (*fig.* 3) is a handsome vehicle, but it is very heavy, both in weight and in draught; and also very severe upon the horse's back and legs. It consists of a peculiarly-shaped body, with a wooden knee-boot, which is therefore incapable of being folded up, and consequently very hot in summer; the head will let down if desired; the springs are somewhat similar in principle to those of the Tilbury, except that they are of the C shape instead of the T. This vehicle is not well suited for country use, but for town work there is nothing so well adapted for those who usually drive themselves.

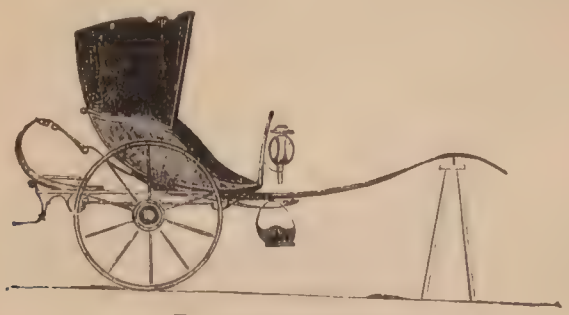


FIG. 3.—THE CABRIOLET.

A board is placed behind for the groom to stand upon, and his weight materially diminishes the knee-motion inside. Cabriolets cannot well be built under 7½ to 8 cwt., and most of them weigh 9 cwt.

THE HANSOM CAB is generally a street vehicle, but sometimes it is adapted to private use, and makes a most comfortable one for professional men or for bachelors, though I cannot see in what it is superior to the Brougham. In a moderately hilly country, I know from experience that it is beaten by any light four-wheeled carriage, because it distresses the horse in going up hill or down. It consists of a roomy, cab-shaped body, of peculiar construction which must be familiar to all, and with the seat for the driver behind, so that he drives over the head of his master. In consequence of the high wheels which can be employed, these vehicles run very light on level ground, and they are much liked on account of the speed with which the horse can get along. They are on Dennet springs, and with plated ash shafts; but, as they are very evenly balanced, there is no knee-motion.

THE NOTTINGHAM COTTAGE CART, as brought out by Mr. Starey, is a very useful vehicle for the sportsman of limited means who wishes an occasional close carriage for evening work or wet weather. It is well adapted for ordinary use, exactly like a roomy dog-cart; but it opens upwards behind to form a head, and downwards to make a footboard, so that the two hind-seats are completely under cover. I can speak fully as to its merits and demerits, being really the inventor of it, as I had one built from my own designs in the spring of the year 1851, and used it fully two years before the Nottingham cart was brought out on a plan precisely similar to mine. Whatever merit, therefore, may belong to the invention is clearly mine; and I really believe it is a very serviceable cart for the purpose above specified. The only drawback is that the wheels throw the dirt in behind, and, unless the weather is cold enough to allow of its being shut up closely, it is a very troublesome fault indeed. The same applies to dusty roads, in which condition this cart is absolutely stifling; but, as I said before, for night work, or as a defence against rain, it is very useful: and it will on ordinary occasions hold several dogs, either for shooting or coursing. Mr. Starey's pattern is not quite so roomy as mine, but his will hold, I should say, two brace of pointers or setters very well.

THE HEADED DENNET is a very uncomfortable kind of close carriage, because the head is obliged to be made so high and shallow that the wind beats the rain in very much, and it is therefore not nearly so good a protection as a gig-umbrella, which may be made a very tolerable cover from the rain.

OPEN FOUR-WHEELED CARRIAGES.

Of these there are the Britschka, the Barouche, the various Phaetons, the Sociable, and the Waggonette.

THE BRITSCHKA AND THE BAROUCHE may be considered together, as they are alike in springs and general principle, though different in the shape of the body. In the former (*fig.* 4) this is straight at the lower edge (called the rocker), and with a very low driving-box, it being generally used for travelling post. In the latter the rocker is boat-like, and the coach-box is raised considerably above the level of the inside seats. Both have a single head behind, and a knee-boot in front, which either turns down and covers the inside passengers' legs, or when turned back, as in the woodcut, it serves to protect the two who ride with their backs to the horses. The Britschka generally has a rumble behind, but the Barouche is not often supplied with that appendage. Both are on C-springs, with elliptic springs under; and both have a perch, as shown in the following figure.

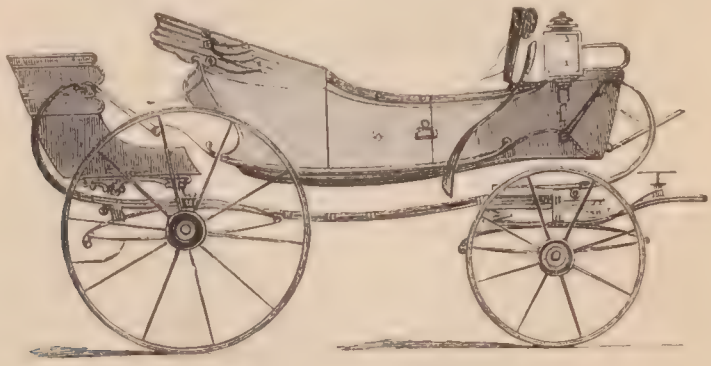


FIG. 4.—THE BRITSCHKA.

THE VARIOUS PHAETONS, including the Sociable, are difficult to define, but they are generally distinguished by the absence of the C-spring and perch. They have almost always elliptic springs, similar in principle to those shown under the C-springs in *fig.* 4, but lighter in make. Sometimes, however, as in the Mail Phaeton, they have them differently constructed, there being four springs before and three behind, constituting in the first case a

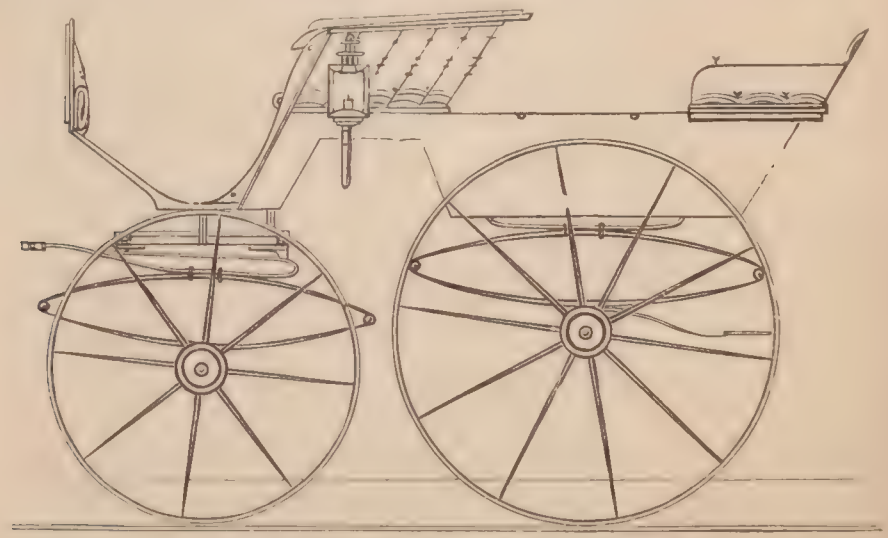


FIG. 5.—THE PARK-DRIVING PHAETON, OR T-CART.

square, and in the second three sides of that figure. These are attached, as in the Stanhope, before, and, like the Dennet, behind, but that they generally have leather braces instead of iron shackles. There is also a perch in the

regular Mail Phaeton, which is, however, sometimes dispensed with in the smaller kinds built in the same general form, but with elliptic springs, and then called T-carts (*fig.* 5). The bodies of these phaetons are of every form which can be contrived to accommodate four or six persons, and they rejoice in

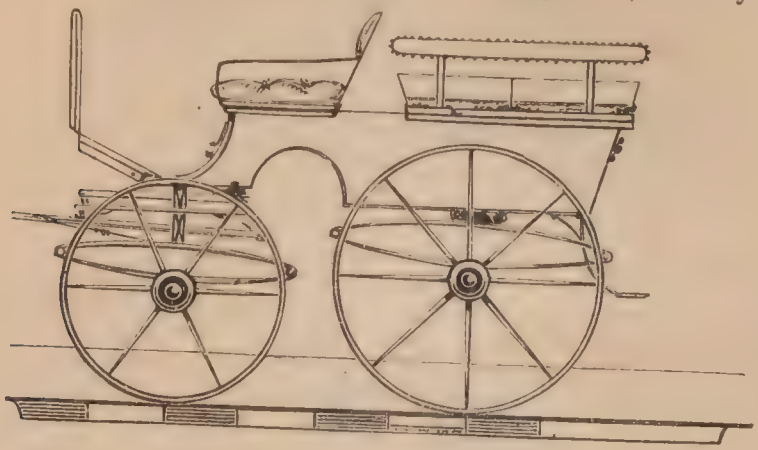


FIG. 6.—THE WAGGONETTE.

distinguishing names almost without end, as, the Pilentum, the Cab-bodied, the George IV., the Albert, the Stanhope, the Four-wheeled Dog-cart, &c. Sometimes a body resembling the inside Irish car is fixed behind the driving-seat, constituting a very convenient family, open-carriage known as the WAGGONETTE (*fig.* 6). An elegant and fashionable park-phaeton is known as the VICTORIA (*fig.* 7), and it has completely superseded the old-fashioned Cab-phaeton of twenty years ago.

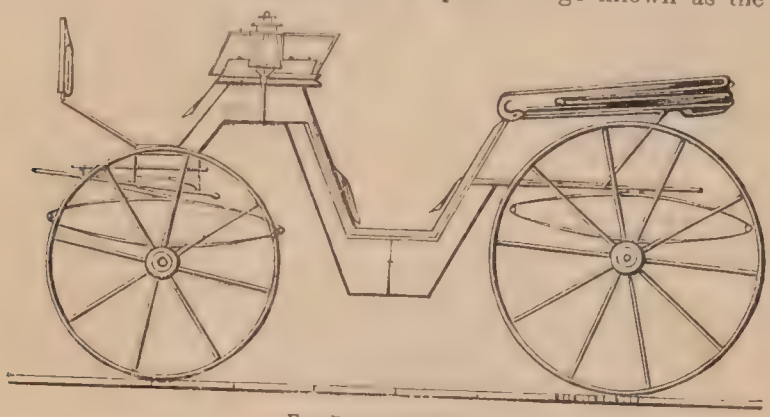


FIG. 7.—THE VICTORIA.

PONY PHAETONS are built in very great variety, and at all prices, the basket-carriage being the cheapest at first cost; but it soon wears out, and in the end costs more than any other.

FOUR-WHEELED CLOSE CARRIAGES.

These are much less numerous, and may be summed up under the following short list:—first, the Family Coach; second, the Chariot; third, the Clarence; fourth, the Brougham. It is true that there are infinite variations made in each of the above, but very slight as compared with the previously-described carriages.

THE COACH (*fig.* 8) has the same C and under-springs as the britschka, with the perch also. It is, however, completely covered in, having only a single glass on each side, capable of being raised or lowered. In the engraving here given, a hammer-cloth is added to the coach-box; but this is only used in London, and is seldom adopted in the country. When this kind of carriage is made to open, with leather sides and top, instead of painted and varnished panels, it it called a

LANDAU, but this is a kind of carriage now very seldom met with.

THE CHARIOT is similar in all respect to the coach, except that it only holds

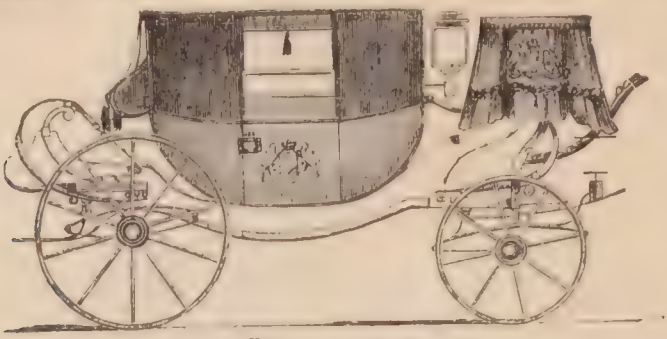


FIG. 8.—THE COACH.

two, and has glasses in front as well as on the sides. When made to open, this carriage is called a LANDAULET.

THE CLARENCE has a light body, to hold four, but placed on elliptic or grasshopper springs, and without a

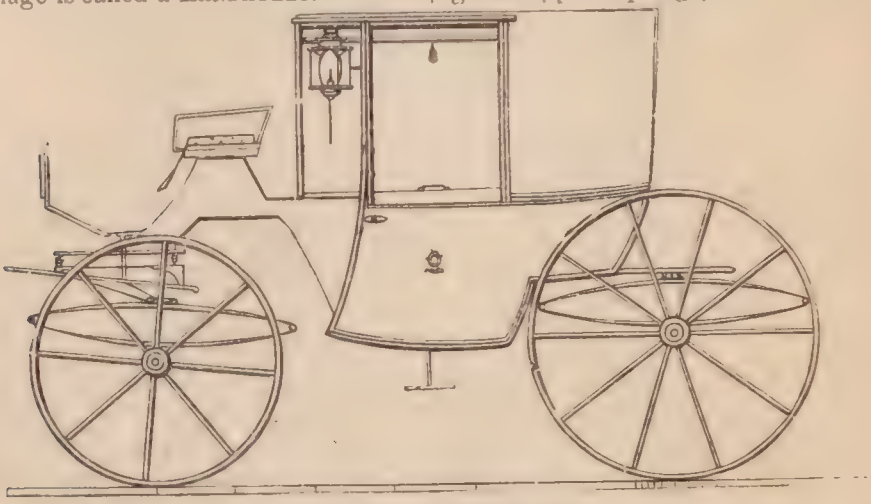


FIG. 9.—THE DOUBLE BROUGHAM.

perch. It is much lighter in every way than the coach, but neither so easy nor so free from noise. From its lightness it is still much used,

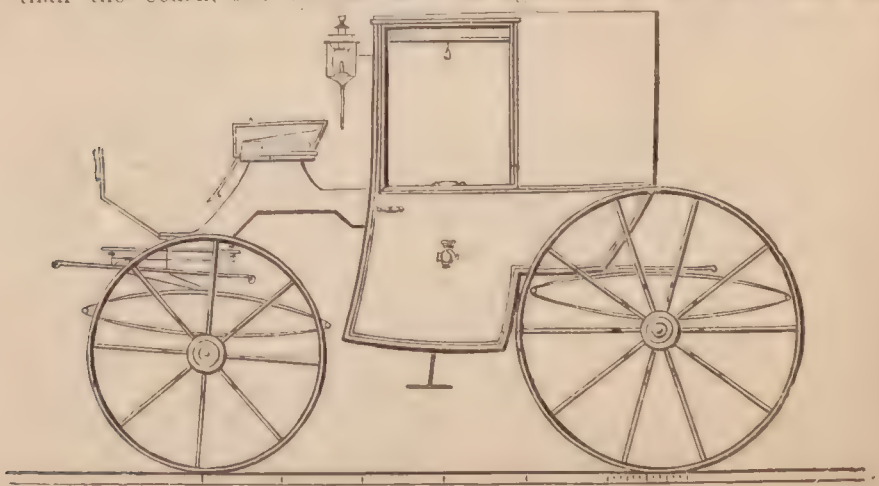


FIG. 10.—THE SINGLE BROUGHAM.

but it generally takes the form known as the DOUBLE BROUGHAM (*fig.* 9).

THE SINGLE BROUGHAM, (*fig.* 10) is the lightest close carriage built, and is on

that account adopted by bachelors and professional men. It is sometimes built as light as 7 cwt. or even less, but is not then adapted for rough work; and from its support being entirely on metal, there is a humming

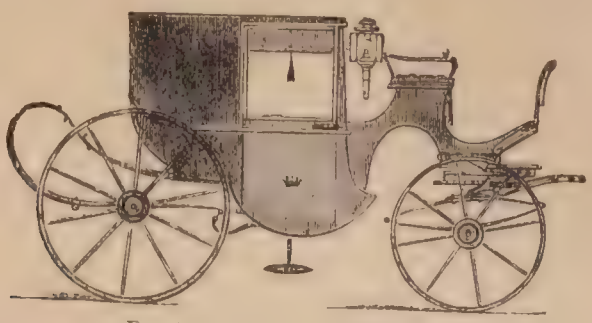


Fig. 11.—C-SPRING BROUGHAM.

noise which is objected to. In order to get rid of this defect a light C-spring Brougham (*fig.* 11) without a perch has been invented, but it is not much used.

Sect. 2.—Harness.

Harness is differently constructed, according to the purpose for which it is intended. Thus there are the following—viz., gig harness, phaeton harness, chariot harness, tandem harness, and four-horse harness, according as each variety is intended for the purpose of being attached to the kind of carriage prefixed to the general title.

Gig Harness, which is equally suitable for single-horse phaetons, or, in fact, for any single work, consists of three portions—first, the drawing part; secondly, the part for holding the shafts of the gig up and back; and thirdly, that for guiding the horse.

The drawing part consists of the *Collar* (10), which is an oval ring padded to fit the shoulders, or of a *Breast Strap*, being merely a broad and padded strap, crossing in front of the shoulder parts. If the collar is used

LENNET GIG AND HARNESS.

two iron bars, called *Hames* (12), are buckled on each side by means of a leather strap at top and bottom, called a *Hame Strap* (8, 11), which passes through an eye at the end of each hame, and is afterwards drawn tight and buckled. Towards the top of each hame is a ring, called the *Hame Terret* (9), for the reins to pass through; and a little below the middle there is an arm, with a metal eye, to which the *Tug* of the trace is attached (13). This tug, again, is stitched into a double piece of leather which is attached to the buckle for the *Trace* (17). This last is simply a long double leather strap, attached at one end to the above buckle, and at the other by an eye to the drawing bar of the gig.

The supporting and backing part consists of the *Pad* or *Saddle* (14),

somewhat similar in principle to the riding saddle, but much narrower and lighter. This has two rings for the reins, called the *Terrets*, and a hook for the bearing rein, all at the top. It is fastened to the horse by a *Belly-band* (15), and at the back of it there is an eye for the crupper, which is a leather strap from it to the tail, round the root of which it passes, and thus holds the pad from pressing forwards. Through the middle of the pad passes a strong leather strap, called the *Back-band*, which is attached to a buckle and strong loop on each side, called the *Shaft Tug* (16), by which the shaft is supported, and also kept back from pressing upon the horse's quarters, in which latter office it is sometimes assisted by a leather strap passing round these parts at 18, and buckled on each side at 19, either to the shaft or to its tug, and called the *Breechen*.

The part for guiding the horse consists of the *Bridle* and the *Reins*, the former being made up of two *Cheek-pieces* and *Winkers* (3), a *Throat-lash* (5), a *Nose-band* (4), a *Face-strap*, a *Front-piece* (1), and a *Head-piece* (2). The cheek-pieces are buckled to the *Bit*, which is generally a strong curb, but sometimes only a *Double-ringed Snaffle*, now very commonly used in driving. The *Reins* (7), are merely long and narrow strips of leather passing from the bit through the hame and pad-terrets to the driver's hand. *Bearing-reins* are additional reins attached to bridoon bits, and passing through ear-rings, on or near the throat-lash, to the hook on the pad. They are, however, now seldom used in single harness; but are shown in the annexed plan. Where the bearing-rein is not used a long ear-ring is now sometimes suspended from the head of the bridle, through which the driving-rein passes, and by which the horse is prevented from getting the rein under the point of the shaft, an accident which is very annoying to those who leave their horses standing about with their servants.

Phaeton and Chariot Harness are both made on the same principle, differing only in lightness both of leather and ornament, the former being altogether much less heavy than the latter. Double harness consists, like single harness, of three essential parts; but as there is no shaft to be supported, the pad is much lighter and more simple. The drawing part is similar to that already described, except that the lower eyes of the hames are permanently connected by an oval ring of metal, upon the lower part of which a ring freely travels, to which the pole-piece of the carriage is buckled, and by which it is backed. The trace-buckles also are opposite the pad, and supported from it by a light strap, called the *Tracebearer*. The traces themselves either end with an eye, or with a full hold upon themselves, with an iron eye, called a *Roller*, and intended to be used upon the *Roller-bolt* of the splinter-bar. The *Pad* is very light, and has no back-band; sometimes a long *Breechen* runs to the trace-buckle; but for light harness a mere supporting strap for the traces, called a *Hip-strap*, is all that is used. The *Bridle* is nearly the same as for single harness, except that there are no ornaments on that side which is towards the pole. The *Reins*, have, in addition to the single rein which is attached to the outside of each horse's bit, another called a *Coupling-rein*, which has a buckle towards the driver, running upon the driving-rein, so that it may be taken up or let out at pleasure. These coupling-reins are attached to the inside of the bit of the opposite horse, crossing one another after they have been passed through both the pad and hame-terrets, so that the off driving-rein, with its coupling-rein, pulls the off-side of the bits of each horse, and the near-reins both the near-sides. In double harness, bearing-reins may or may not be used, but they are generally included in its purchase.

Tandem Harness consists of a single harness for the horse in the shafts, called the "wheeler," with the addition only of double terrets on the pad for the leader's reins to pass through, and also of a double ear-ring for the same purpose. The leader has harness of the same description as the light phaeton double harness, except that both sides of the bridle are alike, and that the traces are about six feet longer than for ordinary work. They have a swivel-hook, by which they are attached either to the points of the shafts, or to the wheeler's trace-buckles, where the shafts have no eyes for the purpose.

Four-horse Harness consists of that for the wheelers, like chariot harness, with double terrets, and one on the head-piece instead of the ear-ring. The

leaders have the same as the tandem leader's harness, except that when they are driven "four-in-hand" their traces are shorter, and they end in eyes or hooks, by which they are attached to "serving-bars" that are suspended to a hook at the end of the pole.

WHIPS vary in size and length, from the small light and stout whip of a pony phaeton to the four-in-hand whip with a lash long enough to reach the leader's head.

SECT. 3.—HARNESS HORSES.

HARNESS HORSES are either ponies, gig horses, Brougham horses, or coach horses; being gradually larger and heavier from one end to the other of the line, which begins at the size of a small pony and extends up to the carriage horse of 17 hands. Ponies are met with all over England, Ireland, and Scotland, and are of various breeds; some of which are of wonderful powers of endurance, with good symmetry and action, and with never-failing legs and feet. In general soundness they far excel the larger varieties of the horse; for which there is no accounting, as they are much more neglected and frequently greatly ill-used. A broken-winded pony, or a roarer, is a very uncommon sight, and even a lame one is by no means an every-day occurrence. There is every reason to believe that the Arab blood has been largely diffused among the ponies of our heaths and forests; and their neat heads and great powers of endurance, together with the small size of their bones, would warrant the assumption. Among the Welsh ponies there is a strong cross of the Norman horse, and they have many of them the dark mark down the back which is peculiar to that breed, together with the hardiness of constitution inherent in it. Gigsters of all kinds are the refuse of the hunting-stock or of the racing-stud; those which are too clumsy and slow for those purposes being put to harness. Some are good trotters and yet bad gallopers, and they are consequently as well fitted for harness work as they are unsuited for hunting. A great number of gigsters are also under-sized carriage-horses, which last are the produce of Cleveland or Clydesdale maresby well-bred or even thorough-bred horses. Until lately the Cleveland mare was almost the sole origin, on the dam's side, of our best carriage horses; but latterly the Clydesdale mare has been very extensively used, and with much better success; inasmuch as the produce are much more hardy, and though, perhaps, not quite so level, yet more blood-like, and their legs and feet much more firm and enduring. This is, I believe, the best cross in the world for general harness work, and it will beat the Cleveland breed in every respect. Mr. Apperley first recommended the adoption of the cross direct between the Cleveland mare and the thorough-bred horse, and his name and authority have kept up the practice ever since; but it is now at last discovered, that as far as legs go they are an unprofitable sort, and that they stand road-work almost worse than any others, except an *unsound* racehorse. I am in great hopes that the Clydesdale mare will turn out a very much better substitute; and that her produce will not only be useful as carriage horses, but as the dams of three-quarter and seven-eighths-bred road horses and hunters. There is a fine roomy frame to go upon, with great ragged hips, flat clean legs, and *good heads*, and with tempers which are fit to be taught anything. The constitution also is good, and in every respect this breed appears to me calculated for the purpose I am now discussing; and from the numerous good specimens I have seen resulting from the first cross I am induced to hope that the expectations of those who have adopted it will be fully realized.

SECT. 4.—HARNESSING AND PUTTING-TO.

HARNESSING.—In all cases the first thing to be done, after the horse is dressed, is to put on the collar, which is effected by turning the horse round in his stall, and slipping it over his head, with the large end upwards. This inversion is required because the front of the head is the widest part, and in this way is adapted to the widest part of the collar, which, even with this arrangement, will in coarsely-bred horses hardly pass over the cheek-bones. Before the collar is put in its place, the hames are put on and buckled, for if this was delayed until after it had been reversed, they would have to be held on while the hame-straps were being drawn to, whereas in this

way their own weight keeps them in place, and they are reversed all together. The pad is now put in its place; before buckling the belly-band of which, the crupper is slipped over the tail by doubling up all the hair, and grasping it carefully in the left hand while the right adapts the crupper. A careful examination should always be made that no hairs are left under it, for if they are they irritate the skin, and often cause a fit of kicking. After the crupper is set right the pad is drawn forwards, and its belly-band buckled up pretty tightly. The bridle is now put on, and the curb-chain properly applied; the reins being slipped through the terrets and buckled on both sides, if for single harness, or on the outside only if for double, and the driving-rein folded back and tied in the pad terret.

Putting-to is managed very differently, according to whether the horse is going in shafts or with a pole. If for shafts, they are tilted up and held there by one person, while the other backs the horse until he is under them, when they are dropped down, and the tugs slipped under or over the ends of the shafts, according to the formation of the tugs, some being hooks, and others merely leather loops. Care must be taken that they do not slip beyond the pins on the shafts. The traces are now attached to the drawing-bar, the breechen or kicking-strap buckled, and the false belly-band buckled up pretty tightly, so as to keep the shafts steady. In four-wheeled cariages it should be left tolerably loose when a breechen is used, to allow of this having free play. The reins are now untwisted from the terret, and the horse is put to. For double harness, the first thing is to bring the horse round by the side of the pole, and put the pole-piece through the sliding ring of the hames, the groom holding it, or else buckling it at the longest hole while the traces are being put to; as soon as this is done the pole-piece is buckled up to its proper length, each coupling rein buckled to the opposite horse's bit, the driving-reins untwisted from the terret, and the two buckled together; then the horses are ready. The leaders of a tandem or four-in-hand are easily attached, and their reins are passed through the rings on the head of the wheelers, and through the upper half of the pad terret.

Unharnessing is exactly the reverse of the above, everything being undone in the contrary order to that in which it was done. The chief errors in either are—in double harness, in not attaching the pole-piece at once in putting to, or in unbuckling it altogether too soon, by which the horse is at liberty to get back upon the bars, and often does considerable damage by kicking.

Sect. 5.—Breaking to Harness.

For Double-harness Work, a double-break and break-horse only are required to effect this object; and a very short time will generally suffice to make a young horse manageable, if driven with a steady companion, and by a careful pair of hands. It is some time before he would be fit for a timid lady, but for country work with those who are not alarmed by an occasional slight freak, after a week or ten days a horse may safely be used. The first thing to be done is to put the harness on, and allow it to remain for an hour or two during the two or three days before the horse is driven. Previously to this, he should be thoroughly broken to the saddle, because he will not otherwise know the use of the bit, and without that he will be entirely unmanageable. It was formerly a very common practice to break carriage horses at plough, by putting them in the middle of a team, and letting them jump and kick till they were tired; but this is a bad plan, and many horses have been spoiled both in limb and temper by it. Curbs and spavins are very commonly caused by the struggles of a high-couraged horse, and jibbing will often ensue as a consequence in a bad-tempered or sluggish one. The hot blood derived from the Eastern horse leads these colts to plunge and fight against restraint, in a very different way from the dull and phlegmatic cart-horse; and therefore the plan is now discarded in favour of the break, where the colt has the power of moving forward, to some extent, in all his plunges, if any, and his blood is not unnecessarily roused by resistance. After he has been made accustomed to the harness, he is put in with the break horse, an animal of great size, power, and steadiness. The break horse should first be put to, and the break brought out into a tolerably open place, where it may start on level

ground, or with a very slight ascent. The break is built very strongly, and should have the space between the drawing bar and the front axletree made up with iron rods, so that if a horse kicks over the bar his legs do not fall, but he draws them back again at once. The bar should be padded, to prevent him damaging himself in his violence, if he plunges and kicks as some will do. The colt should have a well-fitting collar on, and it should be previously well oiled, to prevent its fretting the skin; he should also have a common rope halter on, with the end tied loosely to his hame terret, so that the breaksman can lay hold of it, and draw him towards him, without touching his mouth. When all is ready, and the two horses are put together, with the driver on the box, the break horse is gently touched with the whip, and takes the break off very quietly, the breaksman walking by the side and encouraging the colt. Generally speaking, he walks off as quietly as possible, or he may make a bounce or two, but at first he does not seem to recognise his fetters; after a while, however, he will often plunge more or less, and perhaps, if viciously inclined, begin to kick. The break should be steadily driven off, and kept going for an hour, or rather more, but not much longer, as the shoulders are very apt to be galled by a persistence beyond that time. This lesson is repeated every day, until the horse learns to turn and hold back; and it is astonishing how soon a good-tempered horse takes to his new work. Knee-caps should in all cases be put on, to prevent blemishes in case of any accidents.

For Single Work, every horse should first be put in double harness, and driven at least five or six times. It is not generally at first that vice shows itself, and frequently not until the fourth or fifth lesson, when the driver begins to try what the colt is made of by giving him a short gallop, with a stroke or two of the whip. And until this has been done no one can foretell what the colt will do under provocation, which is sure to come some time or other. When, however, this has been tried, and the colt will turn to either side, stop, and back, as well as throw himself into his breechen in going down-hill, he may safely be put into single harness, though at the same time with great care. Some horses are at all times quiet in double harness, and yet will never go in single harness, of which I have had several specimens. I once had a most inveterate kicker in single harness, which would go as quietly as possible in double; and I have had several bad jibbers which never showed that tendency for some time after breaking. When the horse is first put in single harness it should be in a break expressly made with strong and stout shafts, and high enough to prevent his kicking over; though some horses are able to kick over anything, and no kicking-strap will hold them down. A safety-rein should be added, buckled on to the lower bar of the bit, and passed through a ring on the tug and by the side of the dashboard up to the hand, where it may be held ready for use in case of the horse attempting to bolt. For ordinary use the rein should be put to the cheek, so as to be as little irksome to the horse as possible, and no bearing-rein should on any account be used. With these precautions, and with the aid of a breaksman and a liberal quantity of patience, most horses may be broken-in. When there is a great resistance to the breaking to single harness, or a tendency to jib or run away, a stout shaft may be furnished with a projecting bar of iron, and an outrigger applied to the splinter-bar, by which a second bar is fixed; and then a break horse may be attached outside the shafts, and thus the colt is then compelled to go on or stop by the power of the steady and trained horse. In this mode the reins are applied as for pair-horse driving, and it is a very excellent way of breaking unruly horses; indeed, I have known it succeed when all other means had failed in an obstinate kicker; but only, however, for a time, as the vice showed itself nearly as badly as ever after a time.

Sect. 6.—Driving.

Driving a Single Horse is a very simple process, and requires only a good hand and eye. The reins are held differently from riding, the near rein passing over the fore-finger, and the off between it and the middle finger; and then through the hand, descending from the palm by the side of the knees.

The thumb keeps the near rein firmly against the fore-finger, and I have always found it a good plan to pass both reins out of the hand between the little and ring-fingers, so that, without keeping the thumb very firmly fixed, they do not slip through the fingers when the horse makes a mistake. This has saved me many an accident, because when a person is tired with driving many miles, and the attention flags, a horse, in making a mistake, is not checked till it is too late, in consequence of the thumb and fore-finger suffering the rein to slip some inches before it is held firmly between them; but when passing through an additional pair of fingers, and making an angle in order to do this, it is astonishing how firmly the reins are held, and yet with how much less fatigue to the hand.

The bearing-rein is now almost totally out of use in single harness, where it is no more needed than for riding, because the driver has even more command of the mouth than if he were in the saddle. There is no doubt that a bearing-rein is better than a careless driver; but with ordinary care the horse is saved by a slight check, which does not keep him up, *but makes him keep himself up.* This he is partly prevented from doing from the confinement of the head caused by the bearing-rein; and therefore, although it is useful in driving the horse to hold the head up, it is injurious to an equal extent by confining him from that quick exertion of his powers which might save him from a fall. It is true, that many old horses which have been used to lean upon the bearing-rein cannot be safely driven without it; but in most of those which have never been accustomed to its use it may safely be dispensed with. I have had some few which never could be trusted without a bearing-rein, even though broken-in carefully for me; but this was from defective action, and from that straight-necked form which is almost sure to lead to a heavy hanging upon the bit. It is astonishing how seldom one sees a London cab-horse down now as compared with former years, when this rein was in general use, and yet these horses are quite as hard-worked as ever, and often with scarcely one good leg out of the four. But with their heads at liberty, and only a double-ringed snaffle, they rarely make a mistake; or, if they do, they are almost sure to save themselves from it. Too tight a rein is quite as bad as holding it too loose, and a gagged horse will be so confined in his action as to be always making mistakes. The head should have a tolerable degree of liberty, the mouth just feeling the hand, so as in a good mouth to lead to that playing with the bit which is the perfection of breaking and driving. By this I mean that tendency to keep within the bit and to avoid its pressure which a fine mouth will always show; and yet when there is high courage, a constant desire to press forward as soon as the hand is at all relaxed; up a steep hill, the head should have entire liberty, while down-hill the hand should be shortened upon the rein, and, with his knees straight and the feet well out, the driver should be prepared for a mistake, and ready to assist if it is made, not by violently dragging at the head, but by checking sufficiently without gagging the horse. The mere avoiding of other vehicles in meeting or passing is too simple an affair to require minute description.

In Driving a Pair, the great art consists in the putting them together, so as to draw equally, and to step together. To do this well, the horses must match in action and temper, two slugs being much better than a free-tempered horse with a slug; because in this case the whip applied to the one only makes the other more free, and as a consequence it is impossible to make them draw equally. In some cases where two horses are exactly equally matched, the coupling-reins must both be of equal length; but this is seldom the case; and when they do not do an equal amount of work, the coupling-rein of the free one must be taken up, and that of the idle horse let out. In watching the working of the two horses the pole-pieces should always be the guide; and if both are slack, with the end of the pole steady, and neither horse shouldering it, the driver may rest contented that his horses are each doing their share; if, however, the pole is shouldered by either, that horse is a rogue, and is making the other do more than his share, keeping the pole straight by the pressure of his shoulder, instead of pulling at the traces. On the other hand, if either

horse is pulling away from the pole, and straining at the pole-piece, he is doing more than his share, and his coupling-rein must be taken-in accordingly. Sometimes both shoulder the pole, or spread from it, which are equally unsightly habits, and may generally be cured by an alteration of the coupling-reins of both horses, letting them out for shouldering, and taking them in for its opposite bad habit. The reins are held in the same way for double-harness as for single. Bearing-reins are more necessary here than in single harness, because there is not the same immediate command of a horse; but in tolerably active and safe-goers there is little necessity for them; it is only when horses stand about much that they are wanted, and then only for display; but for this, they certainly are of service, as the horse stands in a very proud and handsome attitude when "borne up," and the pair match much better than when they are suffered to stand at ease. In driving a pair, it should always be remembered there are two methods of driving round a curve, one by pulling the inside rein, and the other by hitting the outside horse; and these two should generally be combined, graduating the use of the whip by the thinness of the skin of the horse. In all cases the whip is required in double harness, if not to drive horses when thoroughly put together, yet to make them pull equally; and there are very few pairs which do not occasionally want a little reminding of their duties. A constant change from one side to the other is a prevention of those tricks and bad habits which horses get into if they are always kept to one side only. The coachman should, therefore, change them every now and then, and back again, so as to make what was a puller from the pole rather bear towards it than otherwise when put on the other side.

Various Devices are used by old hands for curing vice in harness horses. The kicking-strap in single harness is merely a strap over the croup, buckled down to the shafts; and in double harness a somewhat similar plan is adopted, but of little use as compared with that used in single harness. Besides these, there are side-reins, martingales, and a variety of other schemes invented; but everyone who is likely to want them has his own peculiar ideas on the subject, and it will be unnecessary for me to go into a description of them.

Sect. 7.—Cost of Carriages and Harness.

Carriages are variously priced by town and country builders, and also by different tradesmen in London, &c.; their prices range as follows:—

	£ £
Close carriages, with C-springs, from	250 to 300
Close carriages, with elliptic springs, from	100 to 180
Open carriages, with C-springs, from	150 to 200
Open carriages, with elliptic springs, from	120 to 140
Pony phaetons, from	20 to 40
Two-wheeled cabriolets, from	80 to 120
Two-wheeled gigs, without head, from	40 to 60
Two-wheeled gigs, with head, from	50 to 70
Dog-cart, from	20 to 60
Double-chariot harness, from	25 to 40
Single harness, from	8 to 12
Pony harness, from	5 to 8

HUMAN SKELETON

PART IV.

NATURAL HISTORY OF THE PRINCIPAL ANIMALS USED BY MAN IN RURAL SPORTS.

BOOK I.—COMPARATIVE ANATOMY OF MAN, THE HORSE, AND THE DOG.

Sect. 1.—Their Position in the Scale of Creation.

Man himself, together with the horse and the dog, and even the hawk and the decoy-duck, which are the only animals used by him in the capture of the objects of his sport, are all included under the general division *Vertebrata*. These are distinguished by the possession of an articulated skeleton within their bodies, and by a *vertebral column*, containing the most important parts of their nervous system. With the exception of the birds, all the others are included in the class *Mammalia*, so named because they give suck to their young by means of the mammæ. The three species, however, are widely separated in the division, man taking the head of all in a distinct subdivision, and separated from the *Carnivora*, among which the dog is included, by the apes and monkeys. Between the dog, again, and the horse, there intervene the whole of the cetaceous animals and the glires; the horse belonging to the lowest tribe of the mammalia, namely, the *Ungulata*, or those having hoofs. Between these three there will be found to be considerable points of difference in each of the systems of which their frames are composed; all three, however, have a skeleton consisting of the same materials, and containing within its cavities a nervous, a circulatory, a respiratory, a digestive, and a reproductive system. All have the same organs of sense, though differently endowed; and in all the parts of the skeleton are connected together by ligaments forming joints, and moved upon each other by muscles of various forms. The chief differences are—first, in the volume and form of the brain; secondly, in the nature and form of the stomach and intestines; and thirdly, in the form of the organs of locomotion.

Sect. 2.—The Nervous System.

The Nervous System, upon the development of which each animal depends for its position in the scale of creation,

s, in the main, the same in the three animals now under consideration. In man, however, it is much more developed in those parts upon which the extent and powers of the mental manifestations and sense of touch are dependent; whilst, in the dog, another part is carried to an exquisite degree of refinement—namely, the nerves in which resides the sense of smell. But in all three there are the same grand portions to be met with, consisting of a mass of highly-complicated nervous matter contained within the skull, called *the brain*, which is the organ of the mind, as well as, in all probability, the seat of the instincts of the animal. Extending from this is a part called the *medulla oblongata*, connecting it with the spinal column, which is chiefly a large bundle of nerves extended between the brain and all the parts of the body below the head, and gradually separating into its component parts as it passes through the bones of the spine. It receives the mandates of the will from the brain, and conveys back to it the state and wants of the various organs of the body.

But, besides these two parts of the nervous system, there are also two others. The first consists of a tract of nervous matter contained within the spinal cord, and intended to supply the organs of respiration, and to keep them in some measure independent of the brain during its sleep, or pressure from accident; and also to effect an action of a very peculiar kind called *reflex*, by which, in certain cases, muscular contractions are produced by a shorter and quicker process than would be afforded by a transmission of the intelligence to the brain itself, and a consequent mandate from it. The second comprises a chain of little brains lying in front of the spine, and within the chest and abdomen, and intended to supply the digestive apparatus and circulating system with nervous influence (whatever that may be), independently of the brain and spinal cord, although these also send their nerves to them. Thus, the most important organs of all have their separate supplies, by which provision is made against accident; and, in case of its occurrence, one part being enabled to do duty for two.

In this way the whole nervous system is divided into—first, the brain; secondly, the medulla oblongata and spinal cord; thirdly, the general nerves of motion and sensation; fourthly, the special nerves of respiration; fifthly, the nerves of the viscera, commonly called the sympathetic system; and, sixthly, the special nerves of the senses derived from the brain itself.

In all the animals named, the nervous system consists of two parts; the grey, in which power is generated, and the white, through which it is transmitted. The grey constitutes the greater part of the exterior of the brain and the interior of the spinal column; whilst the white makes up the interior and central parts of the brain, the exterior of the spinal cord, and the bulk of the nerves of the body.

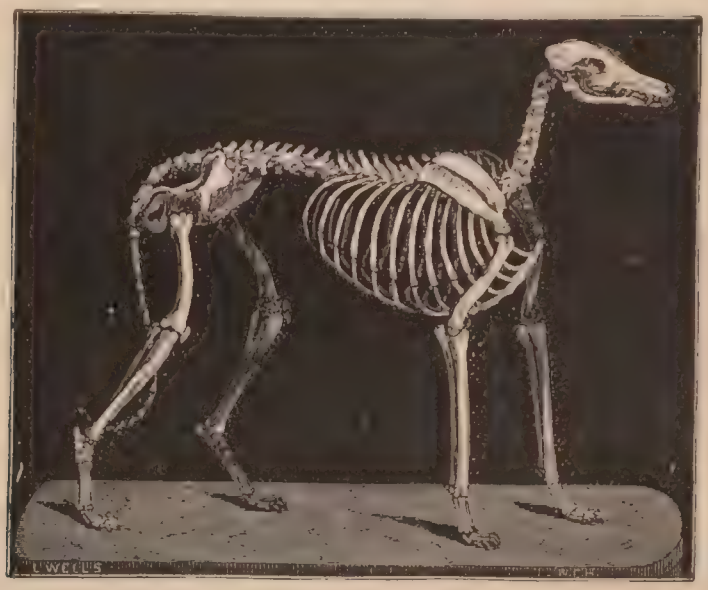
THE VARIATIONS in these several parts are the following:—In man the brain is much the most voluminous, especially in the anterior part, which is the chief organ of the mind. Here the grey matter is very much convoluted, and thereby rendered more extensive in quantity and in surface, by which his general mental powers are augmented. Next to man in this respect comes the dog, who has sometimes tolerably deep fissures in his brain, and consequently a more extended surface than usual; but in all cases much more so than in the horse, whose brain is, as compared to his whole body, very much less than the dog's, and still more diminished in proportion as compared to that of man. In dogs, however, and especially in those whose powers of smelling are much developed, the anterior lobes, in which the nerves of smelling take their rise, are largely increased in size, and nearly as much so in the horse, who, like all animals dependent upon this sense for their safety in selecting food, has considerable acuteness of smell. In other respects the nervous systems of the three are closely allied, and the description which will serve for the one will also suit the others, except in the minute detail of parts.

SECT. 3.—THE SKELETON.

In all three the skeleton consists of the same parts, though the bones composing them vary in number, and to some extent in form. (See skeletons of Man, Dog, and Horse, in which the letters attached to the human skeleton apply also to the corresponding parts

in the other two). It is divided into two portions—one forming cavities for containing the vital organs, and protecting them from danger; the other consisting of central supports adapted to the purposes of locomotion, by offering levers to be worked by the various muscles. The bony cavities are—first, the cranium and spinal column; secondly, the thorax or chest attached to the middle of the spine; and, thirdly the pelvis, terminating it. The bony organs of locomotion are the four extremities of the body.

THE CRANIUM OR SKULL, is variously formed in the three species under consideration; but it consists in all three of the same number of bones, eleven of which combine together to form a hollow case for the brain, whilst six of these eleven, together with the upper and lower jawbones, the bones of the nose, and the cheek-bones, constitute the face. In this part they are developed into several cavities, two of which are called the orbits, and contain the eyes; two, close together, form the nostrils; one between the upper and lower jaw-bones, the mouth; and one on each side for the ears, which last part also contains four little delicate bones for communicating the vibrations of the air to the nerve of hearing. In the jaws, also, there are fixed two rows of teeth, the upper



SKELETON OF THE GREYHOUND.

and the under, which vary considerably; but in each there are three kinds—viz.: first, the incisors, being more or less cutting nippers, and placed in front; secondly, the canine, pointed, and intended for holding or tearing; and thirdly, the molars, for grinding. The formula, as it is called, for each, is as follows:—

IN MAN.

Incisors, $\frac{2}{2}$ Canine, $\frac{1\cdot1}{1\cdot1}$ Molars, $\frac{4\cdot4}{4\cdot4}$

IN THE DOG.

Incisors, $\frac{6}{6}$ Canine, $\frac{1\cdot1}{1\cdot1}$ Molars, $\frac{6\cdot6}{8\cdot8}$

IN THE HORSE.

Incisors, $\frac{6}{6}$ Canine, $\frac{1\cdot1}{1\cdot1}$ Molars, $\frac{6\cdot6}{6\cdot6}$

The age of man and of the dog can seldom be ascertained by the teeth, but that of the horse may generally be arrived at with tolerable certainty, as follows:—

MARKS OF THE AGE OF THE HORSE AS SHOWN BY THE TEETH.

At one year old, all the milk teeth are come up; the two centre nippers of the lower jaw are partially worn down, the two next very slightly so, and the outside nippers entire.

At two years old, the "mark" is nearly obliterated in the four centre nippers, and those of the outside ones are much reduced in size.

At three years old, the colt has shed the two centre nippers, and has two permanent teeth, on which the "mark" is quite fresh; and the tusks begin to show their future position by a prominence of the gum.

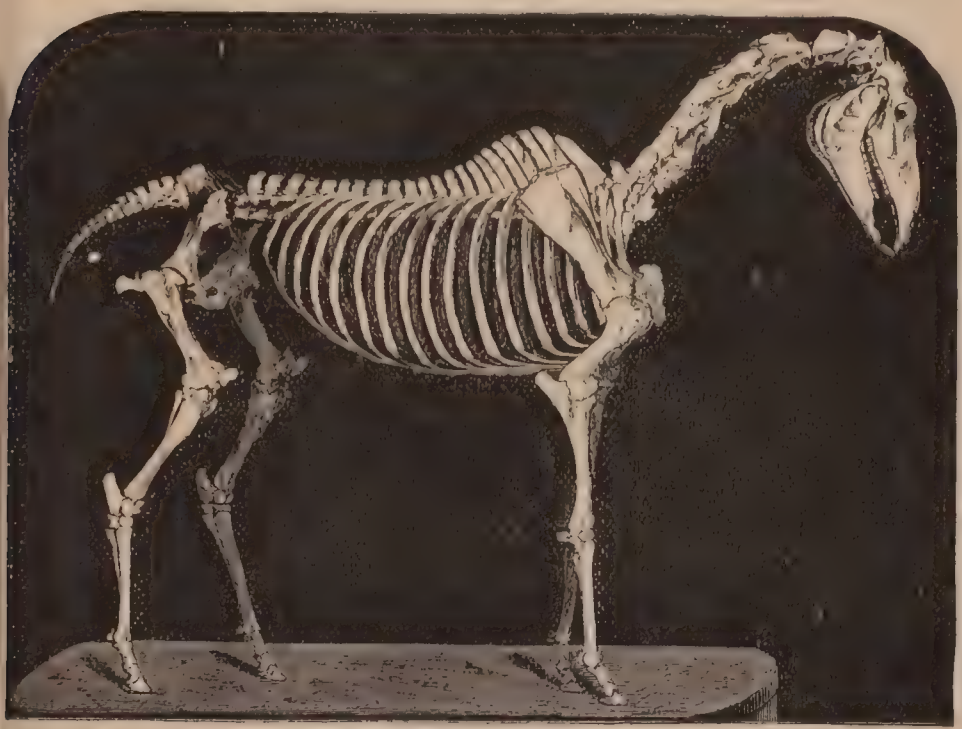
At four years old, the colt has shed the next two milk-teeth, and has four permanent ones, of which the central two are gradually losing their "mark." The tusks now come through, just showing their points.

At five years old, he has all his permanent teeth. The centre nippers are much worn, but still show the "mark." The next are partially worn, while the corner nippers are quite sharp, and with the cavity or "mark" quite untouched by friction. The tusk is much grown, and well raised from the gum.

At six years old, the "mark" in the centre teeth is quite gone, leaving only a yellow oval stain with a black speck in the centre. The next two are also losing their cavity, but the corner teeth are still sharp, and have the cavity unworn to any extent.

At seven years old, the "mark" is gone in all the lower nippers but the corner ones; and

At eight years old, it disappears even there, after which there is no reliance to be placed upon this sign; the length and *obliquity* of the teeth increase with age in both respects, but these signs depend a good deal upon crib-biting, or other habits, and no great reliance can be placed upon them.



SKELETON OF THE HORSE.

THE SPINAL COLUMN (*a b*) consists in ıll of a series of bones united together ›y an elastic material, called the inter-ertebral substance, and by ligaments ılso as well as by muscles. Each bone s pierced by a large hole for the lodg-nent of the spinal cord, and by lesser ıotches, or holes, for the transmission ›f the nerves, a pair of which leave he cord opposite each separate bone. Besides the body and the holes (or *oramina*, as they are scientifically alled) each vertebra consists of a pinous process, or projection, back-ards or upwards, as the case may be; and of another process, or projection on each side, called the lateral process, all of which are intended to secure these bones together, and to give attachment and leverage to the muscles which bend the spine. To the skull the spinal column is attached by a very peculiar universal-hinge-like joint, in such a way that it can be turned in all directions. This in man is very complicated, so as to allow him not only to bend it in all directions, but also to rotate it; whilst in the horse and dog it is strengthened by strong bony projections, so as to support the weight of the

head when extended horizontally. The first seven of these bones form the neck, each being more or less lengthened or shortened, according as they are destined to form the long neck of the horse, the medium length of that of the dog, or the short one of man. The next 12 in man, 13 in the dog, and 18 in the horse, have a rib attached to each, or to the intervertebral substance of each, and constitute the vertebræ of the back. Behind or below these are the vertebræ of the loins, which are 5 in man, 6 in the dog, and 7 in the horse; and like those of the neck are free, whilst the last of these lumbar vertebræ is firmly attached in the same way as the others to a corresponding surface of the sacrum, which forms a part of the pelvis, answering to the spinal column, and containing within it a similar canal, which receives the continuation of the spinal cord in the shape of a bundle of nerves, called in anatomy *cauda equina*. Beyond the sacrum, again, are the ossa coccygis, rudimentary in man, but extending to twenty bones in the dog, and in the horse to about fifteen, to form their tails.

The Thorax, or Chest, is formed by the vertebræ of the back and the ribs attached to them, which correspond in number, being in man 12, in the dog 13, and in the horse 18 on each side. Each of them is firmly attached by two joints, one at the end to the intervertebral substance, the other to a lateral process, by means of a tubercle, a short distance from the end. Towards the other extremity the rib becomes flattened, and in its general outline is bent to an irregular segment of a circle, so that the two sides form an arch, more or less of an oval section. Each rib ends by uniting with a piece of cartilage, which in the first seven or eight is directly attached to the sternum, or breast-bone, and in the remainder indirectly through those next to them. The *sternum* consists of a series of spongy bones, comprising 3 in man, and 7 or 8 in the horse and dog, which receive the cartilages, and, with the ribs and the vertebræ of the back, combine to form the chest. In the horse, the front of the sternum projects considerably beyond the first rib, in the dog very little, and in man it has an articulating surface on each side for the attachment of the collar-bone, which is wanting in the horse and dog. In man the greatest diameter of the chest is from side to side, whilst the reverse is the case in the horse and dog. In each case this cavity contains the lungs and heart and the great vessels, separated from the abdomen by the diaphragm, which is a thin partition of muscle and tendon stretched across so as to form an arch, with the convexity upwards, and a concavity below, against which lie the liver and the stomach—also within the protection of the lower ribs.

The Pelvis (*b c*) consists of an imperfect circle of strong spongy bone, which is made up of the sacrum and ossa coccygis, or tail bones, above; and of three bones on each side firmly united, called the ilium, the ischium, and the pubes. These together constitute an irregular ring, protecting the bladder and the organs of reproduction, and also giving a firm support to the legs. By a reference to the engravings of the three species, it will be seen that they vary in shape very much. In man the wings of the ilium are much expanded, and serve to support the intestines; or, in the pregnancy of the female, the gravid uterus. In the horse and dog these parts are much less developed, and the whole pelvis is merely a strong bony ring for the articulation of the hind-legs, and for the attachment of muscles; but it will be seen that it is articulated to the sacrum in an oblique direction, so that in coming down from a leap the shock to the nervous system is very much diminished. The tail is merely a prolongation of the ossa coccygis, which in man are contained within the skin and are simply rudimentary.

The Hind-Legs of the horse and dog and the legs of man are attached to the pelvis in the same way—namely, by means of a ball-and-socket joint; the thigh bone being deeply imbedded in a cup-like cavity of the pelvis, called the *acetabulum*. This is a very strong joint but it is liable to be dislocated in all three animals; and is in all very difficult of reduction. This leg consists in each of four portions, which in anatomy have received the names of the *femur* (*c d*), *patella* (*d*), *tibia* and *fibula* (*d e*) *tarsus* and *metatarsus* (*e f*); but in common language different names have been given them, which has created considerable confusion.

The Femur—in common language called the *thigh* in man, and the *upper thigh* in the horse and dog—is a long and strong bone, beginning with a smooth ball, called by horsemen the *round bone*, which is deeply let into the cup of the pelvis, and has near it a strong rough process which stands out from it at a considerable angle, and is united to it by a narrow part of the bone called the neck. This process is called the trochanter major, and is the part felt projecting opposite the hip joint; and often called the hip itself, though that name more properly belongs to the crest or ridge of the ilium. Towards the lower end the thigh-bone enlarges and forms a smooth surface, covered with cartilage and extending to nearly three-fourths of a circle from before backwards. This smooth surface is attached by strong ligaments to the tibia below, and has playing upon it in front a bone called the patella in anatomy, or in common language the *knee-cap* in man, and the *stifle-bone* in the horse and dog. The joint itself is the *knee* in man, and the *stifle* in ordinary equine and canine nomenclature; but, being more or less concealed in them by the flank and large muscles of the thigh, it is overlooked by superficial observers. This joint in all three is liable to accidents, or to inflammations of a serious character, and is frequently the seat of lameness.

The Tibia—called in man the *leg-bone*, and in the horse and dog the *lower thigh bone*—extends from the stifle joint to the hock in the latter two animals, and from the knee to the ankle in man. It is supported by a smaller bone on the outside (the fibula), which is lost sight of in common language, and has received no distinctive appellation. In man this bone forms a part of the ankle-joint; but in the dog and horse, the hock joint (which corresponds to the ankle of man) is composed of the tibia alone, as regards its upper boundary, whilst below, in all cases, it is made up by the upper bone of the tarsus—namely, the astragalus.

The Tarsus and Metatarsus vary more in these three species than any other parts of the skeleton, except the corresponding divisions of the other extremity. In man and in the dog the tarsus consists of seven bones, but in the horse of six only. In all, however, the tibia is articulated with the tarsus at about one-half of the length from the hind end, and by a cartilaginous surface, composed of three sides; there is also in each a projecting bone (the *os calcis*), which affords leverage to the strong muscles of the tibia and femur, ending in a tendon, which is called the tendo-Achillis. These bones are united together into a strong whole by ligaments and intervening cartilage, which take off the jar that would otherwise be communicated to the body when the springs and falls are sustained which all these animals are subject to. Below the tarsus are the metatarsal bones—five in man, four in the dog, and limited to one only in the horse, the *cannon*, though with a rudimentary bone on each side, called the *splent bone*. In all of these animals they are tipped by three phalanges to each metatarsal bone, except in man, who has only two to the great toe. In the horse the first phalanx is called the *larger pastern*, the second the *smaller pastern*, and the third the *coffin bone:* whilst the sesamoid bone behind it, which is also found in man and the dog, receives the name of the *navicular bone;* and all are surmounted by horny matter constituting the nails of man and the dog, and the hoofs of the horse. There is, however, this grand difference between the three—man walks upon the whole length of the tarsus, metatarsus, and phalanges, or upon the sole of the foot (*planta*), and is hence called *plantigrade;* but the dog and horse walk upon the tips of their fingers only, and are called *digitigrade* for that reason—the former walking upon all his fingers, whilst the latter walks upon one only, the remainder being lost in the splent bones, which do not reach the length of the fingers at all. Both carry their hocks (corresponding with our heels) some distance from the ground, whilst ours is the first part to touch it in the walk; and it is only in the run upon the toes that it is carried clear of the ground.

All these several points of resemblance or difference will be rendered clearer by comparing the skeleton of man, purposely placed in a stooping position, with those of the dog and horse. A side view of each is given in a corresponding attitude; and thus it may be seen how our knee is the

same joint with their stifles; how our heel is their hock; and in what way our foot corresponds with their pasterns, and our metatarsal bones with the *cannon bone* of the horse; also, how our nails are analogous to the hoofs of the horse, which grow in the same way, or nearly so, and are as easily separated by inflammation, or other disease.

The Upper Extremity of man corresponds with the fore-leg of his chief ministers, the dog and horse, but differs still more than is the case with the other extremity, which is chiefly used by man in progressing, though in a different position to that of the dog and horse, he being a biped. But with the limb we are now considering, a hundred different actions are to be performed — ropes are to be pulled down or up, or straight towards the body; large and small substances are to be grasped in the arms; hammers are to be wielded with terrific force, or with all the delicacy necessary for riveting the fine mechanism of a watch; besides the multifarious movements of a similar character. But in addition to all these motions, requiring the whole limb, there are others depending upon the fore-arm alone, in which man shows his superiority to the dog and horse. If the former of these has a wound in the sole of his foot, he is obliged to lie down and forcibly push it sideways against the ground, while he bends the foot, in order that he may get at it with his tongue. Man, on the other hand, can readily turn his palm upwards, and at once detect the mischief, if any there be. In other words, *man can pronate and supinate his hand*, a gift of immeasurable importance to him, though one which he shares with all the higher genera of the monkey tribe. By this power he can turn any object about as he fashions it to his purpose, and can with the greatest ease do that which the otherwise intelligent dog is incapable of effecting. Hence we find that throughout the whole extremity, although the same bones are made subsidiary to this new purpose, yet they are widely different in their joints, and also vary in general form. Nevertheless, all have a shoulder-blade, a humerus, a radius and ulna, and a carpus and a metacarpus. Man, also, has a collar-bone, by which the shoulder-blade is attached to the breast-bone, and is thus rendered more completely a fixed point for the various operations, often antagonistic to each other, which his wants demand.

The Shoulder-Blade (*g h*) is very similar in all three skeletons in its general form, though varying considerably in position and in the detail of its parts. In each case it is a triangular flat bone, with a ridge dividing its external surface into two parts. In all there is a shallow cup which receives the head of the humerus, and forms with it the *shoulder joint* of man, and the *point of the shoulder* of the horse and dog. Protecting this joint in man, and partially so in the dog, are two projecting points of bone, the *acromion* and *coracoid processes*, to which the outer extremity of the Collar-Bone (*h l*) is firmly united by strong ligaments, the other end being still more securely confined to the breast-bone by a thick intervening cartilage and additional ligaments. Here there is a strong point of dissimilarity, the dog and horse neither of them possessing a collar-bone; but it is not confined to man, since many of the lower animals also possess collar-bones; as, for instance, the hare, rabbit, and rat—and, in fact, all the division Rodentia; most of which, however, require and possess, like him, the power of grasping their food, and can pronate and supinate their fore-arms to a degree almost equal to that with which he is endowed. The shoulder-blade in man does not lie so flat on his sides as in the dog and horse, its outer aspect looking nearly in the same direction as his spine; whilst in the other two it looks directly outwards, or very nearly so, the free margins approaching one another more than the joints.

The Humerus (*h i*) is very similar in its general form in all three, presenting a rounded articular surface at the upper end, a long cylindrical middle, and an oblong smooth ridge covered with cartilage at the other extremity, which forms part of a hinge-like joint, the remainder being made up by the ulna and radius. This bone in man is called *the arm*, or the *upper arm;* and in the horse and dog the *true arm*, being in them concealed within the body by the muscles and skin with which it is clothed. In all three the joint bounding it below is called the *elbow-joint.*

The Ulna and Radius (*i j*) are articulated to the humerus, so as to form

a simple hinge in the horse and dog, as well as in man; but in addition there is another power given to man, to which I have already alluded, and which is carried out by a very simple yet effective contrivance. In him the ulna forms the chief part of the elbow-joint, whilst the radius enters into that of the wrist, and each has a liberty of rotating in its attachment at the opposite end. Thus, the two may be compared to one bone of somewhat greater length, and joined to the elbow and wrist in the usual way, but afterwards divided obliquely from one end to the other in such a way as to leave one joint entire for the wrist, and the other for the elbow. If this were done by a carpenter, and the bones rounded off and attached together by a circle of leather at each end, it would be found that there would be a degree of liberty similar to that which we enjoy, but not quite to so great an extent, which is afforded by the two bones arching out from one another in the middle, and thus enabling the movement to be still more complete. The ulna is the bone chiefly entering into the composition of the elbow-joint; and it, like the hock and ankle, has a process projecting backwards, for the purpose of giving leverage to its muscles, which is the *olecranon* in anatomy, or the *point of the elbow* in common language, in all three animals. The radius in the dog extends to the *carpus*, but in the horse it does not reach so far; together they form the *fore-arm* in man, and the *true arm* in the horse and dog.

The Carpus and Metacarpus (*j k*).—The former consists of eight bones in man, and of seven in the horse and dog; and in this joint there is very little difference between them. In all there are strong ligaments connecting the bones together, so as to form one strong whole, with a projecting hook-like process standing back, under cover of which the flexor tendons pass behind the wrist, and are securely bound in their places. In man the lower row of bones is articulated with the five *metacarpal bones*, which spread to form the palm of the hand. In the dog there are four and in the horse one, which, like the metatarsal bone of the hind-leg, is called the *cannon bone*, and is also supported by two rudimentary metatarsals and *splent bones* of the fore-leg.

The Hand of Man is a complex mechanism, composed of the five metacarpal bones, four of which each carry three phalanges to form the fingers, and the fifth two only for the thumb. These are simple enough in their bony mechanism, but when clothed with their numerous muscles, and furnished with the net-work of vessels and nerves which the sense of touch requires, it is indeed a wonderful and exquisitely delicate machine—capable alike of picking up the most minute speck of sand, or of wielding the ponderous hammer of the smith. In the horse and dog the phalanges are almost precisely similar to those of the hind extremity.

Sect. 4.—The Muscular System.

The Muscles are the powers which chiefly effect the various movements, either of one part of the body upon another, or of it as a whole upon the surface of the earth. These movements are sometimes produced by the simple expansion and contraction of hollow muscles, as in the heart, stomach, &c.; or by means of the attachment of the two ends of a muscle to two separate bones with an intervening joint. The description of the precise mode by which muscles contract is too deep and abstruse a part of physiological science for a book intended for the sportsman; but it may simply be stated as a fact, that all muscles have the power of contraction, either at the mandate of the will, or at the command of some other power inherent in particular parts of the nervous system. The former set of muscles are called the *voluntary* muscles, and are those by which we walk, talk, sing, &c.; whilst the latter are those which contract upon the food in the stomach and intestines, or upon the blood in the heart, &c., without our knowledge and consent, and are hence called *involuntary:* a third set, again, are usually involuntary, but sometimes voluntary, as the muscles of respiration and of the bladder and rectum. But besides this division of muscles into voluntary, involuntary, and mixed, there is another which includes nearly the same sets of muscles in its two sections—the first of which clothes the skeleton, and moves its various parts upon one another; whilst the second incloses the hollow viscera, and contracts upon them, but has no bony

attachments. The first of these includes the voluntary muscles, and those mixed muscles which are concerned in respiration and in closing the various orifices; whilst the second comprehends the involuntary muscles, and those mixed ones which contract upon the bladder and rectum.

The Muscles which act upon the Skeleton are very similar in general form and action in man, the dog, and the horse; and, as is the case with the skeleton, the same names have been adopted into comparative anatomy which were originally given to the muscles of man. There are, however, numerous points of difference, the complicated hand and fore-arm of man requiring many more muscles than the corresponding parts in the dog and horse. In all cases, however, they are adapted by their contraction to bring two different bones together, either in their whole length, as in the case of the ribs, or at one extremity only of each, as in the long bones. In the ribs the movements are made by two sets of fibres crossing one another, so that they do not act directly from the edge of one to that of the next, but obliquely, by which they are enabled to bring the two edges much nearer together than would be the case if they acted in a straight direction. It is a rule in all cases that muscles act with power proportioned to their size, but with an extent in accordance with their length. Hence, a short but broad and thick muscle is exceedingly strong, but cannot effect such extensive movements as another which is longer but thinner. Sometimes, again, as around joints, space is an object, and here the muscular fibre is replaced by tendon, which is a firm band or cord of white and comparatively insensible fibrous matter, to which the contractile muscular fibres are intimately connected, and through which they act. Thus, this department of the muscular system is made up—first, of large masses of muscles attached directly to bone at each end, or with scarcely any tendinous insertion, as those of the shlouder and buttock; secondly, of muscles consisting of a middle muscular part called *the belly*, and of one or more tendinous cords, as in the muscles of the fore-arm, &c.; and thirdly, of a thin sheet of muscle ending in a still thinner sheet of strong tendon, as in those of the abdomen. These muscles are bound down in their places by *fascia*, a thin but strong membrane; and when their tendons pass behind joints they are confined in their proper grooves by still firmer and stronger fibrous tissue, forming a complete sheath for them, and called a *theca*. These as well as the joints are lubricated by a mucilaginous oil, called *synovia;* and, in many cases, beneath muscles which pass over bones, there is a bag of the same lubricating fluid, called a *bursa mucosa*. In all the limbs the muscles are arranged in two groups, one which bends the joints, and the other to extend them; but very often when a long muscle passes over two joints, it is a flexor of one and an extensor of the other.

The Hollow Muscles vary in thickness and in complexity of structure, from the heart, with its cavities and its numerous valves, to the simple, thin, and circular fibres of the intestines.

The heart will be described under the Organs of Circulation, and the muscles of the stomach and bowels under the Digestive Organs.

Sect. 5.—The Organs of Circulation.

The Heart and Blood Vessels are intended to circulate the blood throughout the whole body, including the lungs; and in the three species we are now examining they are nearly identical, the only difference being such as to allow of the upright position of man. The whole body, being built up from the blood, must be liberally supplied with it, in proportion to the duties of the several organs; this is effected by means of a series of tubes beginning with one trunk, dividing and subdividing like the branches of a tree, and spreading over the body, the whole inside and outside of which are furnished from this source with arterial blood, as the material by which they are kept in order and growth, and from which the various organs secrete or excrete the bile, the urine, perspiration, saliva, &c. These vessels are called the arteries, and they end in a set of minute tubes, called the *capillaries*, from their fineness, which is compared to that of a hair (*capillus*). The capillaries, again, are connected with the extreme branches of another set of tubes, still more numerous than

the arteries, and of greater aggregate bulk, which receive the blood through the capillaries from the arteries, and finally end in two veins—the superior and inferior *venæ cavæ*, which force the blood back again into the heart. They are furnished with valves at regular distances, wherever the flow is at all impeded by muscular action or position, as in the legs, arms, &c. This is the mode by which the blood is circulated throughout the body, being propelled by the contractile power of the heart, aided by that of the arteries through their whole course, and also through the capillaries and veins, till it returns back to the heart.

But the blood does not at once proceed on its round again. A cleansing process must be effected; for in its course it has changed its appearance and its properties, going out scarlet and coming back purple, and having lost oxygen and absorbed carbon—in fact, having been converted from arterial to venous blood, and being no longer fitted for the various duties which the blood is required to perform. It is no doubt a living fluid, and endowed with properties of which we cannot fathom the nature; but from experiment we have arrived at the conclusion that the above changes are produced, and that it requires the contact with atmospheric air, with the intervention only of a very thin membrane, in order to restore to it its oxygen, and to remove its carbon. It is also found by experiment, that air after it is expired contains more carbon than before, in the shape of carbonic acid gas, and has lost part of its free oxygen; hence the conclusion is arrived at that the blood has effected this exchange in its passage through the lungs. This is somewhat similar to what goes on in our stoves, where oxygen and carbon combine to form carbonic acid gas; and in both cases there is an evolution of heat. The blood, therefore, must pass through the lungs for this purpose; and it is forced into them by a separate artery (the pulmonary), and returned from them by the pulmonary veins; the arteries in this case carrying venous blood, and the veins bringing back arterial blood to the heart. Thus, there are two distinct circulations going on in our bodies—one driving the blood through all parts, and bringing it back to the heart; the other, forcing this same current through the lungs, and back again to the same heart, but to a different cavity.

THE HEART itself may be said to be composed of two forcing-pumps tied together, each of which consists of a thin receiving cavity (the auricle), and of a strong propelling cavity (the ventricle), with valves between. These are called respectively the right and left sides of the heart. The right auricle, in this way, receives the venous blood from the whole body, and forces it into the right ventricle, out of which it is prevented from returning into the auricle by a valve. The ventricle, contracting, forces the blood into the lungs, through the pulmonary arteries, and back through the pulmonary veins into the left auricle; this again passes it into the left ventricle, which, being also guarded by a valve, propels it through the aorta to all parts of the body, and so completes this beautiful circle.

Besides these blood-vessels, there is also a set of *absorbent vessels*, of whose powers we know very little, except that they take up and convey into the large veins a part of the fluids and solids of the body; but how far they are assisted by the veins, or in what way the work is divided between them, has never been fully ascertained. They are very fine, colourless, and transparent tubes, arising in all parts of the body, and passing through certain organs called *absorbent glands*, finally emptying themselves in the large veins near the heart.

THE PULSE.—The heart propels the blood with such force through the arteries, that in the principal one of the neck of the horse, if a tube is attached to it, a column is raised ten feet high, and maintained at that average level. The power and frequency of the contractions varies much, from 100 beats a minute in the small dog to 40 per minute in the horse. In these contractions the arteries, as they receive the blood, elongate and expand, and then contract upon their contents, so as to make what was at first an intermittent action resolve itself into a continuous one as the blood reaches the small vessels. Hence the flow from a large artery is by jets, and from small ones continuous. This alternate action and reaction of the heart upon the artery, and of the artery upon the blood, constitutes what is called *the pulse*, which may be felt in the situa-

tion of any large artery, but is generally examined in man at the wrist, in the dog under the arm, and in the horse under the lower jaw, opposite the middle grinders.

Sect. 6.—The Organs of Respiration.

In the last section I have briefly alluded to the process which is effected in the organs of respiration, by which the blood is renovated, and animal heat is evolved. The heart has been shown to throw its blood through the lungs, and it must now be explained that these consist of a spongy texture, made up of fine air-cells, communicating with each other, and with small air-tubes (*bronchi*), which finally unite by means of a single bronchus on each side of the *trachea*, or *windpipe*. This, again, passes up the neck, and at the root of the tongue it is guarded by a complex mechanism, consisting of several cartilages, ligaments, and muscles, by which foreign bodies are prevented entering and producing irritation; and where, also, the various sounds are effected which in man constitute his language, and in dogs and horses, barking, growling, neighing, &c. This is called the *larynx*. Into the cells of this spongy texture the air is admitted, and from them it is expelled by the act of breathing; and while there it is separated from the blood circulating over their walls by the thin membraneous lining of the cells, and by the coats of the capillaries themselves. The substance of the lungs themselves is made up of a lining membrane, which extends over the whole inner surface of the cells and air-tubes, and which secretes the mucus that keeps them moist, and is continuous with the mucous membrane of the mouth at the top of the larynx.

The lungs are divided into two large sections, one on each side of the body, which again are subdivided into lobes; but the grand division is into the two lungs; and they each lie within their respective sides of the chest; and they, as well as the internal surface of the ribs, are, as it were, varnished by a thin membrane, called the *pleura*. This membrane is carried from one to the other in such a way that it forms a large shut sac, the outside of which is applied, on the one hand, to the inside of the ribs; on another, to the outside of the lungs; and on a third, to the upper surface of the diaphragm, which forms the lower boundary of the thorax. This cavity usually contains a very small, and almost inappreciable quantity of serum, secreted in the inside, and enabling the various lobes of the lungs to glide smoothly against the walls of the chest. Between these two membranes, the serous on the outside and the mucous on the inside, there is a small quantity of fine cellular membrane, in which lie the blood vessels and nerves, and which is called the *parenchyma*, or substance, of the lungs in anatomy. Each of these tissues is the seat of a separate inflammation, and their nature and functions should be known in order to treat them properly.

But, though I have shown how the blood is propelled through the lungs, and that these are capable of admitting air to it for the purpose of renewing its requisite properties, there remains to be described the mechanism by which this air is admitted and renewed—and this in proportion to the impurity of the blood, whether healthy, the effect of exercise, or unhealthy, as in disease. In order to understand this mechanism, the chamber in which the lungs lie must be examined, when it will be found to consist of an irregular cone with the narrow part towards the neck of the animal. The sides of this cone are composed of a series of hoops, which do not form segments of circles, but are more or less angular in their curves, and are attached obliquely to the bones of the spine, which are fixed points, so that as they are raised they increase the diameter greatly; but in man and in the horse and dog in a very different mode. In man they may be considered as a series of hoops which rise and fall like the hood of a carriage, the breast-bone merely connecting the two sets of ribs, and rising together with them. In him, therefore, the diameter is increased almost entirely from behind forwards, and not to any great extent from side to side. In the dog and horse, on the contrary, the spine and breast-bone are both of them fixed points, and the ribs on each side are raised independently of each other, increasing the transverse, but not the perpendicular diameter. The reason for this difference is, that these animals are both suspended from their ribs to

their shoulder-blades; and if they were continually altering the position of their breast-bones, as regards their spines, they must also raise and lower their bodies, which would be a great and unnecessary expenditure of muscular force; whilst by dilating their chests only laterally, the attachments of the great suspensory muscle are always at the same distance from each other; and whether the lungs are dilated or contracted, the body is at the same distance from the ground. Place a man panting for breath flat upon his breast, and observe how his body rises and falls with each inspiration and expiration, and he will tell you at the same time how much more laborious his breathing is; just so would it be with those animals whose bodies are required to be supported upon stable points, however elastic may be the connecting medium, and not upon a movable frame, which in the horse, if his chest moved like that of man, would rise two or three inches with every inspiration. For this reason it is that many flat-sided horses and dogs are good-winded, because, though their chests are not naturally capacious, yet from their capability of increasing the cavity rapidly, they can change the volume of air more completely than a rounder and larger-barrelled animal, whose ribs are not so movable. Every one has heard the schoolboy's riddle, which demands —"How is it possible to arrange a hundred sheep-hurdles so that two more shall enable the fold to contain double the number of sheep?" The answer being, by placing them in two straight lines, leaving only a narrow space of the width of a hurdle between them; the volume is doubled by a slight increase of width. So it is with a narrow chest, if only the ribs are set on with a good curve, and the muscles have power to bear them.

Besides this increase of the capacity of the chest by means of the ribs, there is another and most important aid in the diaphragm, a muscular and tendinous division, of an arched form, which separates the chest from the abdomen, lying completely across with its convexity towards the lungs. This convexity is capable of being diminished to a plane surface, by its contraction; and in the living state, especially during its powerful action when strong exercise is going on, there is reason to believe that it becomes nearly or quite plane, whilst it is afterwards rendered convex again by means of the abdominal muscles, which force the liver and stomach into its concave surface, and thus push it against the lungs themselves, and expel their air.

In this way, the muscles attached to the ribs increasing the transverse diameter, and the diaphragm enlarging the cavity towards the abdomen, the air is strongly drawn through the trachea into the interior of the lungs, and expelled again by the muscles which lower the ribs, and by the abdominal muscles pushing up the liver and stomach, as well as by the natural elasticity of the lungs themselves, and of the walls of the chest. In ordinary respiration, the inspirations are chiefly carried on by the diaphragm; but in violent struggles, which demand all the air that can be forced in, the shoulder-blades, arms, neck, and head all become fixed, because they have muscles attached to them, and to the ribs also, which in the usual way are employed in moving these various organs, but which now become auxiliary to respiration by acting upon the ribs from these several parts as fixed points. Hence, the runner keeps his arms well up and fixed, and his head and neck stiff, because in this way instinct teaches him that his ribs are more forcibly raised than they would be with lowered shoulders, flaccid arms, and drooping chin. The horse also extends his neck, and by so much helps to raise his ribs on each side; but he does not set his shoulder-blades, for two reasons —first, because it would interfere with his progress in the gallop; and secondly, because the muscles which run from the shoulder-blade to the ribs are not auxiliary muscles of respiration, for they have no power to act upon the ribs in the way in which only their action would be serviceable—that is, towards the apex of the chest, which is also the root of the neck, where the really useful auxiliaries are attached.

THE CHEMICAL ACTION of respiration is more mysterious than the mechanical, for though much has been discovered by Liebig and others, there is still a great deal which is incomprehensible. It will, in the first place, be necessary to explain that the atmospheric air is made up of 21 parts of oxygen to 79

of nitrogen, which is the condition in which it enters the lungs, whilst on its reappearance it has sustained the following changes—first, it has lost oxygen; secondly, it has received carbon in the form of carbonic acid; thirdly, it has suffered a change in the quantity of nitrogen, varying with the condition of the animal. These changes are intimately connected with the effect upon the blood, which is found at the same time to have gained what the air has lost, and to have given out exactly what the air has gained; and thus it is conclusively ascertained that the air is inspired for this express purpose. The absorbed oxygen is supposed by Liebig to enter then and there into combination with the carbon, which process he describes as exactly similar to ordinary combustion; but, from other experiments, there is strong reason to believe that the oxygen is absorbed into the blood, and that its union with the carbon takes place in all the parts of the body; the carbonic acid being there generated and contained in the veins until they reach the lungs and skin, where it is given out; so that the combustion is a general one, and animal heat is thus produced in the extremities, independently of the warm blood sent them from the heart. But besides this oxygen absorbed for this specific purpose, a still further quantity is absorbed for the purpose of uniting with the sulphur and phosphorus contained in the body, by which they are enabled to combine with other elements, and so produce the phosphates and sulphates.

The carbon which is exhaled from the lungs and skin is of an enormous amount, varying with the exercise taken, and with the temperature of the surrounding air—a great quantity of the former and a low degree of the latter both increasing the exhalation of carbon. By actual experiment it has been found, that a person who, in a state of rest and fasting, excreted 145 grains per hour, after a meal and a walk excreted 190 in the same time. During sleep the same person only excreted 100 grains. It is supposed that an adult male who takes strong exercise will excrete about 10 or 11 oz. per 24 hours; and that those who take little will not lose more than 7 or 8 ounces. Assuming 10 oz. as the average, its union with oxygen to form carbonic acid gas will produce 21 cubic feet of that noxious element. So that a man lying in a confined space of 7 feet long by 3 feet wide, will, in the course of 24 hours, discharge from his person enough carbonic acid gas to fill this space 1 foot high; and as carbonic acid is much heavier, and very slowly mixes with the general atmosphere, he would, if lying perfectly flat, destroy his life by suffocation, unless there happened to be some leakage under doors and similar apertures. This fact should be borne in mind in the construction of stables, where the area for each horse is seldom more than 100 superficial feet; and, as the weight of his body is more than five times greater than that of man, it will be manifest that he will also give off during the same time enough carbonic acid gas to fill his stall or box to the same height; and it is only the presence of the crevice under the doors, *and very often of open drains untrapped*, which saves him from the injurious effects of this gas.

The examination of the nitrogen which is given off or absorbed is not of so much importance to our present subject, especially as little is known of its effects; but it is found that animals well fed and in health increase the nitrogen already existing in the air, whilst those which are badly fed absorb it, and consequently diminish its amount in the air; thus, in hibernating animals, nitrogen and oxygen are actually absorbed to a greater extent than they exhale carbon; and hence they do not lose weight during the period of their long sleep.

The following table shows the difference of the proportions of these elements in the two states of the blood:—

	Arterial Blood.	Venous Blood.
Carbonic acid . .	62·3	71·6
Oxygen	23·2	15·3
Nitrogen . . .	14·5	13·1
Total . . .	100	100

Thus, it would appear that the quantity of nitrogen is very nearly the same in both conditions of the blood; whilst about one-third of the free oxygen of the arterial blood disappears during its circulation and passage into the veins, and is replaced by an equivalent amount of carbonic acid. The converse of this takes place in the capillary

vessels of the pulmonary vessels, where this same amount of carbonic acid is set free and replaced by oxygen.

Sect. 7.—The Organs of Nutrition and Depuration.

In all animals there is a constant necessity for the repair of the waste going on in the various processes, such as muscular contraction, respiration, &c. This repair must be accomplished by means of food; and it is further necessary that digestion shall prepare this food previously to its being converted into that generally useful fluid, the blood, from which all the materials of the body are built.

The Blood, as seen by the microscope in the living vessels, is composed of two parts—one transparent, thin, and nearly colourless, called *liquor sanguinis;* the other consisting of *corpuscles*, some of which are red, and others colourless, but all more or less disk-shaped. When blood is drawn from the body, there is a different separation, into *clot* and *serum*. The former is composed of a network of *fibrine*, in which the corpuscles are entangled, while the latter is identical with the liquor sanguinis, but deprived of its fibrine. The serum also contains a quantity of *albumen*, which coagulates by heat; and likewise earthy salts, which remain after it is evaporated and exposed to a high temperature. This gives us the four following components of the blood, differently arranged in the living vessels, and when deprived of their protection:—

BLOOD IN THE LIVING VESSELS *consists of*

Fibrine, Albumen, Salts,	Forming with water the liquor sanguinis, in which are suspended the corpuscles.

BLOOD, WHEN DRAWN AND COAGULATED, *consists of*

Fibrine and Corpuscles,	Forming the clot, with small quantity of water.
Albumen and Salts,	Forming with a larger proportion of water the serum and remaining fluid.

The Use of these various materials is as follows:—

1.—The Fibrine is the material which is most thoroughly elaborated, and ready for supplying the muscles and other solid tissues with new matter, in lieu of their worn-out atoms. It is, therefore, continually being employed for these purposes, and fresh supplies afforded, partly by absorption directly from the digested food and partly from the conversion of albumen into fibrine in the blood-vessels themselves, which is constantly going on in the circulation of the blood.

2.—The Albumen is the next in point of importance, being also the most abundant, and not only keeping up by its conversion the requisite quantity of fibrine, but also directly supplying many of the secretions and formations, as the scarf-skin, nails, horns, and a great part of the skin itself, also the soft parts of the bones, and, in fact, all the gelatinous tissues, as well as, in all probability, the corpuscles themselves.

3.—The Corpuscles are chiefly useful in carrying on the process of respiration, and in stimulating the contractions of the muscular tissues; but the presence of the red corpuscles is no doubt necessary to the health and well-being of all the warm-blooded vertebrated animals.

4.—The Saline Matter is partly required in order to prevent decomposition, and, in part, to supply the mineral materials necessary for the formation of bone, in which lime and phosphorus are chiefly concerned; and also for the secretion of some of the fluids which are necessary for the purposes of digestion—as the bile, saliva, pancreatic fluid, &c.

5.—The Water is, as in all other cases, the means of making fluid the otherwise solid materials.

The Supply of Fresh Blood is kept up by the *digestion* and *assimilation* of food admitted into the stomach for that purpose; hence it would appear that for a healthy individual, food which contains all the essential elements of blood, in the proportions adapted to his particular state, is the best calculated to support the waste of the system. Thus, supposing an animal is largely consuming his muscular apparatus by long-continued and violent exercise, then food which contains in large proportions the elements necessary for the repair of muscular tissue, will be best adapted for his state. Or in case of an animal exposed to severe cold, his condition will be most improved by supplying him with food in

which carbon is a principal ingredient, because we know that this elementary substance is the one which is engaged in producing animal heat. The first and most important process, therefore, in nutrition is the procuration of proper food.

Digestion is the next step in the circle of needful processes, and by this is understood the prehension, deglutition, maceration, and chemical conversion of the food into what is called *chyme*—a pulpy fluid, which is ready to be changed into *chyle*, and at once absorbed into the blood by the vessels specially appointed for that purpose. Now, the seizing, masticating, swallowing, and maceration in the stomach, of the articles of food, is managed somewhat differently in the three species under consideration; man employing various agents, such as fire, water, mechanical trituration, &c., to assist him; and the dog using his teeth and paws, to gnaw his bones and tear the flesh into shreds before he swallows it. The horse, on the other hand, crops the grass with his incisors, or gathers up the corn with his lips, and grinds the latter well into a pulpy mash before he swallows it. In these several ways, and by the aid of the saliva, the food is masticated and swallowed by them all, and reaches the stomach more or less prepared for the dissolving power which that organ possesses in such a remarkable degree.

In man and the dog the stomach is capable of holding a very considerable meal, being in all probability intended by nature for long fasts and occasional replenishments only—not perhaps exceeding one meal a day, as is the usual custom with savage tribes, who indeed gorge themselves, and then fast with an endurance which civilized nations cannot possibly imitate. The same change has taken place in the dog's stomach by civilization, and he now is rarely suffered to pass twenty-four hours without two or three meals; when in his natural state there can be no doubt he would scarcely average three or four full meals a week. The horse, on the other hand, when in his native plains, is perpetually feeding in small portions at a time; and he then, as now, requires small and regular supplies of food at short intervals, to keep him in a state of full health. By many this is supposed to be in order to enable him to gallop without injury; but it is rather that he may *always* be prepared for flight, because, unlike the carnivorous animals, he cannot choose his time, but must save himself by the use of his heels, whether after a full meal or a light one. The dog, on the other hand, can gorge himself and wait till he is again hungry before he exerts his powers; and he may consequently be furnished with a capacious stomach without risk. Man, also, has the same choice, and, like the dog, he fills himself, and then sleeps till his stomach warns him that he must replenish it by the chase.

The stomach consists, in all three, of an oval sac, with an orifice at one end by which it receives its food, and another at the other end, through which it passes it out into the small intestines as soon as it is fit for the manufacture of *chyle*. It has an outside covering, smooth and lubricated with serous fluid, which suffers it to assume the various forms which its change from a state of emptiness to one of repletion demands. Next to this serous coat is a muscular one, which serves to contract the various parts, and so move the food from one to the other; and lining this, again, is the mucous surface, studded with small glands, by which the *gastric juice*, the main agent of digestion, is produced, and also sufficient mucus to protect the walls of the stomach from its powers, or from any deleterious article admitted into it by mistake. This juice is a very powerful solvent, and is made up of various acids and other powerful agents, by which even bones themselves are dissolved in the stomach of the dog, and also sometimes in that of man. It is not present in the empty stomach, but is poured out rapidly as soon as food is introduced, and soon changes it into the pulpy substance which I have already said is called chyme. This is semi-fluid, and with a slight acid taste, sometimes creamy in appearance when the food is oily, or more like gruel when farinaceous. Part of this is at once absorbed through the walls of the stomach itself, and conveyed direct into the blood; the remainder passes on by the agency of the muscular fibres into the *duodenum*, or first small intestine, where it is mixed with the *bile* and with the *pancreatic juice*, and becomes converted into a still more pulpy and milky fluid,

the *chyle*, which is passed on into the remainder of the small intestines, the *jejunum* and *ilium*, and there is taken up by the chyliferous absorbents, called lacteals, and conveyed into the large vein near the heart by a particular absorbent tube, called the *thoracic duct*. The remainder, which is not absorbed, is passed on by the muscular contractions of the bowels, called *peristaltic*, to the larger intestines; and there becoming still further relieved of its watery particles, and also receiving the addition of some worn-out materials poured in from the blood-vessels surrounding their coats, it finally assumes the appearance of *fæces*, and is discharged *per anum*.

The Bile and Pancreatic Fluid are both concerned in the preparation of the chyle, to which duties they are specially appointed; but over and above this it appears that the bile is useful in depurating the blood, and removing from it certain noxious elements, which, if retained, would become highly injurious. The pancreatic fluid is only secreted during digestion, but the bile is poured out at all times; and, if not secreted because of any torpid condition of the liver, the blood becomes overloaded with noxious particles, headache follows, and finally, fever and even fatal injury. Bile is a kind of soap, and appears to act specially in converting sugar into albumen and the fatty compounds necessary for the support of life. The pancreatic fluid, on the other hand, seems to render the fat taken as food fit for absorption, which it is not in its raw state. But not only is the liver useful by supplying bile, but it also directly purifies the blood as it passes through it in the return from the intestines to the heart; and besides this, it seems to exert a powerful influence in *assimilating* the new material to the condition which it must attain as a part of the blood. Here also fibrine is largely formed from albumen, and fat from sugar.

The Kidneys and Skin still further purify the blood, and remove the watery particles which are introduced into it as a solvent for the various solid elements required for general use. Hence, the greater the necessity for rapid supply of solid material, the more liquid is removed by perspiration or by the formation of urine, so that new fluid in the shape of chyme or chyle may be introduced into the blood-vessels without unduly distending them.

The Bladder is the hollow sac in which the urine is accumulated, as it is secreted by the kidneys, to prevent the necessity which would otherwise be felt for the continual passage of urine.

In Three Various Ways the blood is nourished and depurated, receiving its additional supplies—first, from the general absorbents; secondly, from the lacteals through the thoracic duct conveying chyle; thirdly, direct from the internal surface of the stomach and small intestines, through the veins, whose contents are conveyed through the liver, and depurated by the lungs, the liver, the kidneys, and the skin. The supplies, in the first place, are all derived from the food, which is digested by the stomach, aided by the bile and pancreatic juice, and converted into chyle, which is absorbed into the blood.

The Articles of Food which are most adapted to support man, as well as the dog and horse, in a high state of health and energy, are nearly identical in ultimate composition, though somewhat different as they appear to our general senses. In each case food is required for four different purposes—first, for the building up of the machine; secondly, to supply the loss occasioned by its constant tendency to decay, even when in a state of repose; thirdly, to make up for the waste occasioned by wear and tear of the muscular system; and, fourthly, to supply the materials for the heat-producing process. Now these processes are differently carried on, according to the age and habits of the individual; thus, the young animal will call upon the first division far more than the adult, and will, consequently consume much more food; whilst the very old one will be able to sustain life in a state of rest, with little or no demand for any supply but the second and last. If proper food is not supplied to the growing young animal his frame is imperfectly nourished, and he not only is stunted in size, but his growth is not in a proper proportion of parts, and he is unsightly and awkward. The same takes place from overfeeding, when a redundancy seldom, is met with equally in all the various proportions, but rather in some one or two, which are exaggerated to an undue degree, and completely overpower their

adjacent members. Thus, fat is stored up in enormous masses in the adult animal; and though it is capable of being afterwards withdrawn, yet it often has in the meantime led to the absorption and loss of those parts upon which it has been lying.

In estimating the value of the various aliments, therefore, the age and the habits must always be taken into consideration, and when this is done it will be found that saccharine and albuminous elements will be required for young animals, rather than those loaded with fibrine; whilst in the adult period this element is required in large quantities; and in old age, oily or starchy compounds, which are full of carbon, and support combustion. Sugar, there is reason to believe, is very readily admitted into the circulation, and supports the process of respiration well—hence its use to young animals. In omnivorous animals, like man and the dog, a mixture of substances containing nitrogen, with others free from it, is the best kind of food; and this is met with in flesh and farinaceous food, together with the saccharine fruits of the earth. But wheaten bread contains the same elements, and upon it either the man or the dog, or even the horse, can be sustained in good health, if accustomed to it from an early stage. With the addition of an animal oil, it will at all times serve for a permanent diet; and in a low temperature will scarcely be sufficient without it, or some fermented liquor in its place. But if violent exercise is taken, flesh should be added, in the case of man or the dog; or in the case of the horse, a large proportion of corn, with, at the same time, *well fermented hay*, in which sugar is thoroughly developed. Rice and potatoes, together with sago, and other articles mostly made up of starch, are chiefly beneficial in supporting respiration, and effect comparatively little towards the repair of the muscular tissues, which are composed in great measure of nitrogen.

Another important consideration in supplying food is the change which is required in its nature, few animals being capable of carrying on digestion of the same materials from week to week without suffering loss of health. Thus, cattle must be moved from one pasture to another; and the horse, after a time, must have a change of food from corn and hay to green food or carrots, or his stomach is sure to suffer. In a state of nature instinct prompts to these changes; and even in a half-artificial condition the hare will travel for miles to obtain what she wants, although to all appearance she has it close to her own haunt.

But these organic substances are not the only ones required by the system; there are also inorganic matters which enter into the composition of the frame, and which must be obtained with the food. *Salt* affords by its decomposition the muriatic acid which is concerned in the digestive process, and the soda of the bile. It is also an important constituent of the serum of the blood, preventing it from being decomposed. *Phosphorus* enters largely into the composition of bone and tissue. *Sulphur*, again, exists in small quantities; and *lime* is abundantly required. *Iron*, also, must be obtained, because its presence is important to the due formation of the red corpuscles. These substances are all obtained from our ordinary food. Salt is abundant in flesh and milk, but it should be supplied to herbivorous animals, like the horse, in addition to his food. Lime is abundant in vegetable seeds, like wheat and oats, and in the grasses; and if these are supplied to the horse he will develop bone in a sufficient quantity.

Sect. 8.—The Organs of Reproduction.

These are the same, or very nearly so, in all the three subjects under examination, each possessing the same male and female organs. The male are only necessary for the elaboration of the semen, and for transmitting it into the uterus of the female; but her part consists in preparing an ovum in the ovarium, in transmitting it safely to the uterus, and in then attaching it to the walls of that organ, and nourishing it for a stated period till birth takes place. This subject has been touched on in page 551, and a more elaborate discussion is scarcely suited to a book like the present.

Sect. 9.—The Organs of Sense.

In all the three creatures we are now examining the same organs of sense exist, but with varying degrees of acuteness. In man the sense of touch

and the eyesight are perhaps more acute than in either the horse or dog; but in the dog the sense of smell is far beyond that of man or the horse; and in the last-named animal the hearing is particularly acute. But, anatomically, these organs differ little, each having the same parts, though varying slightly in detail; as in the shape of the pupil of the eye, which in the horse is oblong horizontally, whilst in the dog and in man it is perfectly circular. The horse also possesses a peculiar structure within the eye, the *tapetum lucidum*, of a lustrous green colour, by which he is enabled to see objects in comparative darkness, and especially under his feet. The external ear also differs in all, but the internal parts of this organ are very similar. The nerves supplying the nose are developed in the dog in a high degree, as are those distributed to the ends of the fingers in man, and as a consequence, these organs are endowed with an extra degree of sensitiveness. The compass of this book, however, will not allow of a full examination of the detail of parts which make up those beautiful organs, the eye and ear.

Sect. 10.—The Skin, and General Cellular Membrane.

All the Parts of the Body are wrapped up first of all in a packing of cellular membrane, which attaches the various muscles, vessels, nerves, and bones intimately together, yet with a power of gliding upon each other which is necessary to their several functions. This is the structure which is blown up in the dead calf, and which consists of a series of cells communicating with each other throughout the body, and therefore capable of being filled by one or two openings made by the butcher, and inflated by him by means of a pipe passed into them. In these cells fat is deposited and stored up for use, and when wanted it is re-absorbed from them, and carried off into the blood to be converted into other needful materials, or used for the purposes of respiration, for which its carbon is eminently calculated. The skin, again, covers and guards all the parts, and keeps them warm and protected from slight injuries. It is pierced by minute openings, through which the sweat is distilled, and also by oil-tubes, which lubricate its surface and keep the hair with which it is more or less covered in a state fit to encounter the watery fluid which rain or flood presents to it. The skin is a highly elastic and yielding, yet tough investment, which will submit to great stretching before it gives way, and is so beautifully adapted to the varying conditions of the animal frame that it fits the lean racehorse as closely as the pampered denizen of the stud.

The Hair is a dead matter secreted by certain bulbous glands, which, as they form it, push it through the skin, being in close contact with its inner surface, and protected by it. The hair of man is not regularly shed; but in the dog and horse it grows longer and coarser in the winter than in the summer, and is consequently shed to provide for this necessity of their exposed condition. This takes place in the spring and autumn, and is strongly marked in the horse, whose coat is completely changed in the spring, and partially so in the autumn; and less so in the dog, who only changes his once in a year, and is not provided with one in the winter much longer than in the summer, but has a slight increase of growth added to that which has existed during the warm months. The colour of the hair varies in all; but is confined to black, brown, dusky-red, and white, or some mixture of these—as mottled-grey, iron-grey, roan, strawberry, pie, skewbald, brindle, black-and-tan, dun, and cream-colour.

The Nails and Hoofs are appendages to the skin, and they are also dead matter, secreted much in the same way. Both are composed of a horny matter, elastic, firm, and capable of bearing great friction. The nails of the dog and the hoof of the horse completely surround the bone upon which they are moulded, and have the vascular structure which secretes them lying between it and them. In man, on the other hand, the nail only covers one-half of the tips of his fingers, because a soft pulpy end is wanted for the organ of touch.

PART IV.

NATURAL HISTORY OF THE PRINCIPAL ANIMALS USED BY MAN IN RURAL SPORTS.

BOOK II. GENERAL HABITS AND VARIETIES OF THE DOG.

CHAPTER I.

GENERAL HABITS OF THE DOG.

The Dog (*Canis familiaris*) is the chief assistant that man has in the sports of the field; without him hunting, shooting, and coursing would be wholly destroyed, for no substitute has yet been discovered either for the speed of the greyhound, or the unerring sense of smell of the bloodhound, foxhound, or pointer. It is foreign to my purpose to discuss those qualities of the dog which are not called into play in the pursuit of game, as, for instance, his fidelity as a guard, his sagacity as an aid in tending sheep or cattle, his cleverness in fetching and carrying, or in playing the many amusing tricks which so often are taught him. No animal excels him in these qualities, not even the semi-human elephant; though it is only in certain varieties, as the poodle, that these intellectual developments are carried to the full extent.

It has already been said that the dog belongs to the division *Vertebrata*, and the class *Mammalia*. It is also in the order *Ferœ*, the family *Felidæ*, and the sub-family *Canina*, which includes the dog, wolf, jackal, and fox. This sub-family is distinguished by having two tubercular teeth behind its canine teeth in the upper jaw; and the *Canis familiaris* has the pupils of the eye round, while in the fox they are like those of the cat, perpendicular slits, and in the wolf oblique ones. Volumes have been written on the origin of the dog, but our knowledge on this subject may easily be summed up in one little word, *nil;* I shall therefore not inflict upon the readers of this book all the various arguments *pro* and *con.;* suffice it to say, that the domesticated dog is an inhabitant chiefly of cold and temperate climates, though wild and semi-domesticated varieties are found in India and other hot countries; and that our European varieties rapidly degenerate if transported to a very warm climate, as is seen in India and China, but will bear every climate from the Arctic circle to the Equator without loss of life. The dog is a carnivorous animal by nature, though he will feed upon and devour any vegetable substance that comes in his way if pressed by hunger. In his domesticated state he thrives best upon a mixed diet, and is usually considered, and with truth, as omnivorous. His teeth are fitted for tearing flesh, and he has no true grinders suited to bruise grain; his stomach is a simple one, and his intestines are of a medium length between the short ones of the true carnivora, and the long ones of the graminivorous quadrupeds.

CHAPTER II.

VARIETIES OF THE DOG.

For the Purpose of Sport, the dog may be divided into four classes—first, those that find game for man, leaving him to kill it, as the setter, pointer, and spaniel; secondly, those that kill it when found, as the greyhound; thirdly, those that find and kill it, as the staghound, foxhound, harrier, beagle, otterhound, deerhound, and terrier; and fourthly, those that retrieve wounded or dead game—as the various retrievers, shepherd and drover's dogs, Newfoundlands, &c. For the first of these purposes the dog requires a strong sense of scent, considerable, though not first-rate speed, great power of endurance, and also, and most particularly, implicit submission to his master's orders. For the second, speed only is required, coupled with power of endurance, but divested as much as possible of the powers of scent and intellect. The third requires, as in the first, strong

ENGLISH POINTER

ENGLISH SETTER

sense of smell, with greater or less speed, according to the purposes to which they are applied, but with immense powers of endurance and hardihood. Whilst the last requires the peculiar and remarkable intelligence which teaches the dog to bring to his master that which naturally he would much rather devour himself. It also requires a strong sense of smell; and, in the water-retrievers, considerable power of resisting wet and cold. Besides these, there is a large number of dogs used in this country for other purposes connected with game-preserving, such as the mastiff and bull-dog, and their crosses.

In describing the various dogs the comparative value of the several points have been laid down according to the scales adopted by the National Dog Club, with some slight modification.

Division A.

DOGS THAT FIND GAME FOR MAN, LEAVING HIM TO KILL IT.

This division of the canine race includes all the dogs used with the gun, with the exception of the retriever. They consist of the pointer, setter, and spaniel.

Sect. 1.—The Pointer.

The pointer of the present day is no doubt descended from the old Spanish dog crossed with the foxhound or greyhound, by which he has obtained greater lightness and activity, united with more lasting powers, but at the expense of his nose, which is not so delicate as that of the source from which he sprang. In the southern districts of England partridge shooting is, I regret to say, often, and indeed generally, carried on without either pointers or setters, and they are consequently much less common than of yore. Hence, as setters are admitted to be the best for the moors, they are gradually superseding the pointer, which will probably soon be among the extinct varieties of the species.

The Head of the pointer should be large but not heavy, wide across the ears, and showing a raised forehead. The nose should be long and broad, with its front outline square, the teeth being even. This marks the pointer from the hound, whose nose has a tendency to slope towards the throat; in extreme cases this is called the "pig's snout." The lips should be well marked, without running into the flews of the bloodhound. Ears long, soft, and thin, set on low down and carried quite close to the cheeks. Eyes moderately large, soft, and intelligent, the colour varying from buff to dark brown according to that of the coat. A peculiarly rounded outline on the upper side of the neck marks the well-bred pointer, which can scarcely be described in words. No throatiness is allowable, as it indicates too much of the Spanish strain. These *points* should be divided as follows:—Skull, 10; nose, 10; ears, 5; neck, 5—total, 30.

The Frame may be divided into loin, hind-quarter, shoulders, and chest. The loin, which with the hind-quarter constitutes the propelling power, must be well arched, broad, and deep, and strongly united to the ribs in front and to the couples behind, which latter should be wide and somewhat ragged. Next in importance are the shoulders, upon the obliquity of which depends the elasticity of the action, while they must be well clothed with muscle to enable the dog to keep it up for many hours in succession. The chest must be full, but not so much so as that of the old barrel-shaped Spanish pointer, the back ribs being required to be very deep. Hind-quarters well bent at the stifles, provided with strong hocks, and clothed with powerful muscles. In estimating these *points*, I should give to the shoulders and chest, 15; back and hind-quarters, 15—total, 30.

The Feet and Legs must be good, or the continued action of the dog will altogether be forbidden, as weakly-formed ones soon give way, and the dog becomes lame. The feet should be round and catlike, with hard horny soles, pasterns short, large in the bone and tendons, and not sloping backwards towards the knees to any great extent. A long and muscular arm is specially necessary, and the elbow must be neither in nor out. These *points* may be valued as follows:—feet, 6; legs, 6; elbows, 4; hocks, 2; stifles, 2—total, 20.

The General Quality and Stern indicate by their appearance the amount of breeding, and are therefore necessarily attended to, but the former cannot be described. The stern should be shaped like a bee's sting, having a strong root, a straight, *fine*, and stiff body, and a pointed tip. Value, 10.

Of Colour, Symmetry, and Coat, the first may be selected according to fancy, but most people prefer a dog with a great deal of white, so that he may readily be seen in turnips. Liver and white or lemon and white are the most common, next to which come black and white, which, when mixed with tan on the cheeks, indicates the hound cross. Whole colours are liver, red, black, and white. The texture of the coat should be short and soft, but not too fine, the last-named quality being often accompanied by a delicate constitution. These *points* are put at 10.

Sect. 2.—Setters.

The setters of the present day are classed as either English, Scotch (Gordon), Irish, or Russian. It is needless to describe the last-named, as the breed which was common enough thirty years ago is now seldom met with, and has no advantage to recommend it. It is a very long-haired animal, almost resembling a poodle in coat, except that there is not so much curl. Hence, in the hot weather of August and September the dog is soon knocked up, and, though possessing a very fine nose, is of little use at his master's heels.

All the Various Breeds of the setter are doubtless descended from the spaniel, which dog has a natural propensity to pause before springing on his game. This peculiarity has been encouraged and developed until the innate point has become established, and the setter puppy, if well bred, may be expected to point game on the first or second time of showing it to him, or if very high couraged, as soon as he finds he cannot run it down by speed. In the early days, after the breed was first established, it was used solely by the falconer and netter, who were contented with any animal which would find birds, and, setting down on the ground, would allow the net to be drawn over him, or the hawk to be cast off, without moving. Since the introduction of the plan of shooting flying, a faster and stouter dog has become necessary, and one also which will bear the heats of August and September. Hence the object of the breeder has been to get rid of the thick curly coat of the spaniel on the body of the setter, and at the same time to retain and even improve upon the elegant feather under the tail—or flag, as it is called—and behind the legs. The three breeds into which setters are divided all agree in this point, however much they may differ in others, as will presently be seen.

The English Setter.

This dog is longer and more open in his frame than the pointer, and has a proportionally longer stride in all his paces. He is capable of harder work than that dog, and as his toes are clothed with hair in the interval between them, he is not so liable to become "foot-sore," either from very dry or very wet ground. In regard to nose, there is much difference of opinion; but I am inclined to believe that the setter has a slight advantage in this respect. When well bred the setter is as easily broken to point and back as the pointer; but he is seldom quite as tractable in regard to the other elements of his education, and is, moreover, more apt to forget his lessons than his smooth competitor in the shooting-field. These remarks, however, apply much less to the modern setter than to his ancestors, the dog of the present being a great improvement upon that of forty years ago.

The Head is lighter than the pointer's and narrower across the ears, but usually high at the forehead. The nose is long, and shows a slight tendency to fall inwards towards the eyes, the corners of which should be not less than four inches from its tip. This should be broad, with large open nostrils, well bedewed with moisture, and of a dark colour. Teeth level, and without the slightest tendency to the "snipe" form. Lips full at the angles but not pendulous even to the extent allowable in the pointer. Ears must be about six inches long, set on low and well forward, carried without any approach to the prick shape, and rounded at the lower edges. Eyes large, but not protruding, and beaming with love of approbation and intelligence. Neck long, thin, and slightly arched above, but showing a clean cut line where it joins the head. Value of *points:* head, 10; nose, 10; neck, 5; ears, 5—total, 30.

The Frame and Outline, though different to the eye of the judge from that of the pointer, cannot be separated from the latter by any verbal description, except that the chest is rarely so wide or barrelled as is allowable in that dog. The hips are also more ragged and the

GORDON SETTER.

IRISH SETTER.

loin slightly more arched. These *points* are ; shoulders and chest, 15 ; back and hind-quarters, 15—total, 30.

In the Feet and Legs also the remarks on the pointer are equally applicable; but there is some difference of opinion as to the hare foot, which by many is considered to be necessary to the thorough-bred setter. In this shape the toes are longer than in the cat foot, more split up, and thickly clothed with strong hair between the toes. No doubt this last feature is of great service in keeping the skin free from inflammation when at work over marshy ground; but the long toes which usually attend this development do not stand so well as the stout cat-like formation of the other foot. It is somewhat difficult to strike the balance between these feet, as one form is best suited to wet ground and the other to hard. If it is possible to get the cat-like foot with sufficient hair upon it, I should no doubt prefer that form ; and though I have never seen the two fully united, I do not despair of getting them by careful breeding. Legs and feet, 12 ; elbows, hocks, and stifles, 8—total, 20.

In the General Quality or Character there is not much to alter from the remarks made on the pointer, but the *stern* or *flag* varies a good deal. It should be set on well up the back, but not carried with the slightest curl over it, though there may be a gentle and regular sweep in its upper outline. The feather should be flat, long and silky, deep in the centre, and tapering to each end. This should be as pointed as in the pointer, and should be carried in the same perpendicular plane as the rest of the flag, without the slightest approach to the corkscrew form. Total value, 10.

The Coat must be fine and silky, but still somewhat hard to the touch, —a combination that can only be felt, and not imagined. There must be little or no curl, while the shorter it is on the body, and the longer in the feather, the better for the value of the dog. Value, in conjunction with symmetry, 10 points.

The order of merit of the various colours met with is as follows, viz. :— 1. Orange and white, with freckled nose and legs. 2. Orange and white, plain. 3. Lemon and white. 4. Black and white, especially if ticked slightly with tanned spots on feet and legs—known as "Belton greys." 5. Pure white. 6. Black. 7. Fallow or yellow. 8. Liver or liver and white. 9. Liver and tan.

The Scotch or Gordon Setter.

Of late years this breed has become very fashionable, and especially since dog shows were established. At the first of these, at Newcastle, Mr. Jobling's Dandy gained the judge's approbation, endorsed by the general public ; since that, Mr. Pearce's Kent (bought of Sir Edward Hoare) has carried on the *furore* which was raised in favour of this breed, with the able assistance afforded by the late Mr. Burdett with his Ned and Brougham, Mr. Fleming's Dandy and Moll, and others of less note. The Gordon differs from the English setter in the following properties :—In stern he is generally shorter, or if long, it has a decided tendency to show the "teapot" form, than which nothing is more ugly. This is probably derived from the colley cross, which, I have no doubt, has been used in some strains with the disadvantage of introducing this defect and a more woolly coat. In my own dog Rex (son of Kent and Regent), whose portrait faces this page, the flag is faultless, and is somewhat longer both in bone and feather than is given by the artist, who sketched him while yet in his puppyhood. The Gordon head is perhaps slightly heavier than the English, and his nose and intelligence are proportionably good. In colour he is a rich black and tan ; but it is asserted, by many experienced breeders, that the original colour was more or less mixed with white, and I believe that black white and tan colour is quite as correct as the whole black and tan. His carriage is very lively, and he is full of hunt, but he is apt to be shy and headstrong. My experience of the breed in the field is chiefly confined to Rex, who is certainly one of the most perfect dogs I ever saw out ; but though he was selected from a lot as a sample, to test their value, it does not follow that he is not an exceptional animal of his strain. He, like all the dogs of the breed I have seen, does not last more than half a day, but some of the bitches of the same strain are everlasting. The *points* are nearly the same as in the English dog, the only difference being that 5 points are taken off the ears and neck, and added to the colour and coat.

The Irish Setter.

Respecting this breed there is still more difference of opinion as to the shade of colour than in regard to the Gordon. By one party it is asserted that the well-bred Irish setter must be of a deep pure blood-red, without the slightest approach to black or mahogany colour on the back, ear, or stern. After the publication in the *Field* of an article on the Irish Setter, in which this was laid down as an attribute of the breed, Mr. Hungerford opened the controversy by asserting that, according to his experience, they might be either red or red and white; followed by Mr. John Walker (the well known judge at most of the recent dog shows), who raised the question as to the objection to the black tinge, which was answered by Colonel Whyte in the negative, and by Mr. Henry Blake Knox as follows: "The coat should be rather coarse, for you want him for hard work and hardships; smooth or wavy, not curly; hair of moderate length on the upper parts of the body; the foot-half tawny, the tip-half deep senna, appearing as if stained with port wine (blood red), but never showing black on the ears, back, head, or tail; the legs and under parts, deep or pale tawny; white should not appear anywhere except in the centre of the forehead and the centre of the breast. I breed without any white at all." Captain Hutchinson objects to the black stain, and supports his opinion by adding some high authorities in its favour. On the whole, therefore, it may be assumed that the weight of evidence is against the dark stain.

As regards other Points, Mr. Knox's description is so admirable that I quote it *in extenso*:—"The ears should be long, reaching at the end of the hair to the nose, pendulous, and as if lying in a fold, set well back and low on the head; they should never be set high, short in length, or half diamond-shaped; their feather should be moderate. The eye is of a rich hazel or bright brown, well set, full, kind, sensible, and loving—the iris mahogany colour; it should never be gooseberry, black, or prominent and staring like the King Charles. The nose is mahogany, dark flesh, or blackish mahogany, never black or pink. Even dark flesh is not so much admired, though, with a good clear eye, I like it; but with the gooseberry eye you indeed have a rare brute. My old dog has a dark flesh-coloured nose, unlike any of his kind, yet none of his pups got it, all having dark mahogany. The whiskers red; the head itself long and narrow, yet wide in the forehead, arched in the peaked cranium behind. A short bullet head, a wide flat one, or one running to a point at the snout, is very common and very bad. The lips should be deep, or moderately so. The chest wide, when the dog is sitting on his haunches, and the head held back. Too wide a chest is apt to give a dog a waddle and a slow gait. The chest ribs cannot be too deep. The loins for speed should be long, moderately wide, and the belly well tucked up. The fore-legs straight, moderately feathered, and the feet close and small, not round like a hound's, or splayed. The ham straight, flat and muscular, and feathered well with buff-coloured hair, and the hind-quarters altogether squarely and actively made. The tail should be well covered with coarse hair curling along the tip, and hanging moderately, though bushy from beneath, but not in silken streamers, or in a great bushy flag like a Newfoundland. It should be carried in a horizontal line with the back, or slightly above it, not cocked or curled. In the field or in excitement, I like it carried low, stiff, and beating the hind-legs."

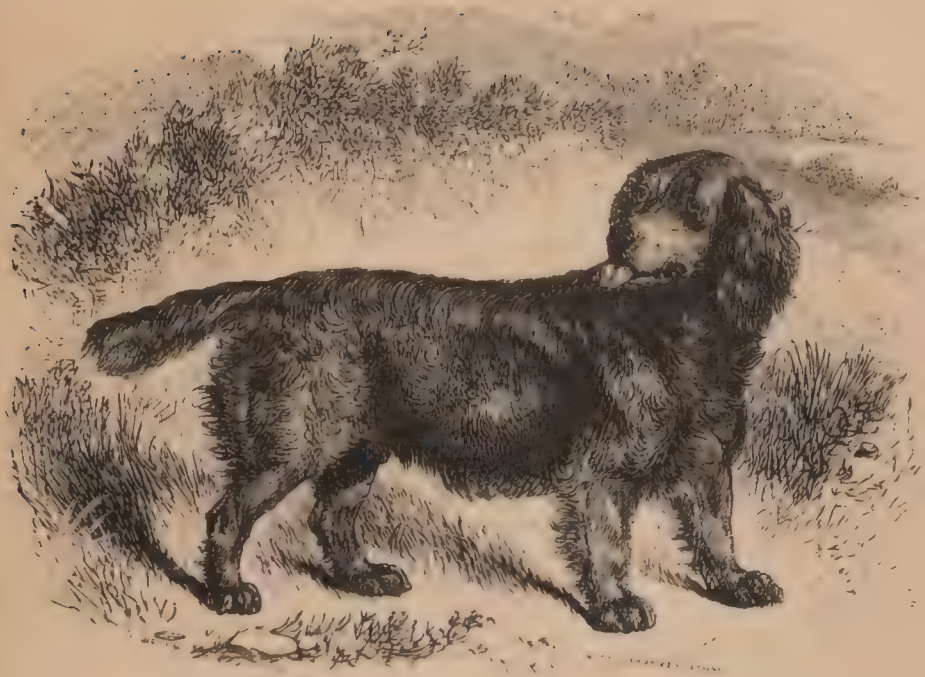
As in the case of the Gordon setter, there is no difference in the *points* from those of the English variety.

Sect. 3.—Field Spaniels.

The field spaniels are divided into two principal groups, the Springers or larger variety used for all sorts of covert game, and the Cockers kept more especially for woodcocks, to follow which they must be of smaller size. The Springer is again subdivided into the Clumber, Sussex, Norfolk, and other strains; while the Cocker includes the Devonshire and Welsh varieties, as well as many other strains without special name.

The Sussex Spaniel.

This is a very old breed, and is probably the earliest of all those used with the gun or net, though by some people the Clumber is considered to have the claim to seniority. The Sussex Spaniel has now become very rare, owing to



SUSSEX SPANIEL

CLUMBER SPANIEL

its being replaced by the Clumber, which works mute, and is more easily kept under control, and therefore better for assisting the beaters in our modern battues. This dog, though not mute like the Clumber, is not noisy or babbling, and seldom throws his tongue after he is thoroughly broken. He is faster and more enduring than the Clumber, and also bears water better.

THE HEAD of this spaniel should be long and heavy; eye large and languishing, with the forehead prominently over it; muzzle square; lips somewhat pendulous; mouth large with the under jaw receding slightly, though not to the extent which could constitute a pig-jaw or snipe-nose. Ears large and lobe-shaped, well furnished with silky hair, and set on low down. Nostrils large, and the external nose large and liver coloured. Neck strong and muscular, with the crest slightly arched. Value of these *points:* head, 25; nose, 10; ears, 5; neck, 5—total, 45.

THE CHEST should be very wide, with round or barrel-like ribs, deep behind; shoulders well thrown back; body long and round. Value: chest, 5; shoulders, 5—total, 10.

THE LEGS should be short and strong, well feathered to the feet before and behind. THE FEET round, with the toes well arched and abundantly furnished with tan between the toes. *Points:* legs, 5; feet, 5.

THE LOIN must be very strong: back ribs very deep and round; tail (docked to about 9 inches in length) set low and carried considerably below the level of the back, never above it. *Points:* loin, 5; back ribs, 5; low set and carriage of tail, 10—total, 20.

THE COLOUR is a golden liver without white. COAT waved (not curly), thick, shiny, and abundant. *Points:* colour, 5; coat, 5. SYMMETRY, 5.

THE TEMPERAMENT must be cheerful, courageous, and docile. Weight from 35lb. to 40lb.

THE CLUMBER SPANIEL.

This dog obtained his name from the seat of the Duke of Newcastle, where it is supposed the breed originated. At all events, it was confined to that family until the middle of the nineteenth century. This dog is invariably of great length, low on the leg, and heavy in frame; his weight varying from 40lb. to 45lb., and his height not exceeding 20 inches. He is devoted to the gun, but cares little for his master without that accompaniment. Dogs of this breed never throw their tongue when at work, being perfectly mute if pure in blood. They are capable of very high training, and a team of them, consisting of three or four couples, may be broken to "do anything but talk." Hence, where dogs are used in covert, the Clumber has become the general favourite, and it is a treat to shoot over a perfect team. These dogs last many years, and seldom give up work till incapacitated by old age or disease.

THE HEAD should be large and long, and marked with lemon to a line just in front of the eyes, with a blaze up the face. Eyes large and thoughtful; nose and lips flesh or liver-colour, sometimes cherry. Ears large, but not lobe-shaped, nor so heavy as those of the Sussex, and with less feather. Neck strong and long. Total value, 40.

BACK long and straight; chest wide and deep, showing scarcely any daylight under it. Shoulders thick and wide through them; loin straight but strong, with wide couples; back ribs very deep. Total value, 30.

THE LEGS must be straight, very stout and very strong. Fore-arm immense; shanks and hind-legs well developed in bone, and clothed with strong muscles. Value, 10.

THE STERN should be set low (it is generally docked, but not always; if docked, it is left fully 11 inches long). It is carried low and is tufted at its extremity, but not to the same extent. Value, 10.

THE COLOUR must be a true lemon, the paler the better. Orange is often thrown, but is objectionable, and any other colour is a mark of impurity.

THE TEXTURE OF COAT is soft, shiny, silky, and nearly straight. Value, 10.

THE NORFOLK SPANIEL.

The chief differences between the Norfolk and the Clumber spaniels are as regards length and colour, the former being shorter and of various shades of black, liver, and yellow, more or less mixed with white. There are no positive signs by which he may be distinguished from the various mixed breeds of Springers throughout the country.

THE COCKER.

The Cocker is much smaller than the Springer, seldom exceeding 18lb. in

weight for bitches, and 25lb. for dogs. He is much more active than the Springer, and of any colour more or less marked with white. The Devonshire and Welsh Cockers are of a deep liver colour, without white, and closely resemble each other in other respects. They are nearly mute, but whimper slightly on a scent, and when well broken they distinguish each kind of game by the note they give out, especially the woodcock, of which they are particularly fond.

THE HEAD of the Cocker should be round and of a medium length, and not square, like that of a Clumber or Sussex spaniel. The muzzle should neither be snipy nor pointed, but should be wide and well developed, and taper slightly close to the end. The forehead should take a sudden rise from the top end of the muzzle, near the eye, into a finely arched skull, with a somewhat knotty or jutting occiput, resembling that of a bloodhound. The eye should be of a medium size, not too full (which would indicate a cross with the King Charles spaniel), but should have a gentle and at the same time a "knowing" expression. THE EARS should measure 22 to 24 inches across the head from tip to tip, including the hair, which should be soft and silky. They should lie close to the head, be set well back, and rather low—not fixed on the top of the head.

THE NECK should be strong and muscular. SHOULDERS broad and prominent. CHEST, of medium depth, broad, well-developed, and muscular. BODY AND LOINS, strong and powerful; loins slightly drooping towards root of tail.

THE FORE-LEGS should be strong, muscular, straight, and not inclined to be bandied. HIND-LEGS, strong, and like those of a greyhound, well bent, and very short from hock to foot. FEET, strong and round, of a good medium size (not too small), and well feathered between the toes.

THE TAIL, thin and straight, should be set low, and always carried below the level of the back, with a downward tendency.

THE COAT, waved and silky, but never wiry or woolly, and three to four inches in length. THE FEATHERING on the legs, hams, and tail, and the frill on the breast, should be four to five inches in length. THE COLOURS, black, brown, liver, black and white, liver and white, and lemon and white.

The *points* are: head, neck, and ears, 30; chest and shoulders, 15; back and ribs, 15; legs and feet, 15; low carriage of tail, 10; symmetry, 10; colour and coat, 5.

SECT. 4.—WATER SPANIELS.

The water spaniels may be classed as English or Irish, besides which there is the Tweedside breed, which resembles a good deal in appearance a small ordinary English retriever of a liver colour.

THE OLD ENGLISH WATER SPANIEL.

This dog is now seldom or never seen in a state of purity, and it is scarcely necessary or even possible to describe it with any degree of certainty as to the truth of the particulars. It will be sufficient to remark that he was liver-coloured, with white round the neck, on the chest, face, and feet; head long and eyes small, and ears of medium length, covered with thick curly hair.

NORTH OF IRELAND WATER SPANIEL.

Much the same may be said of this breed. It resembles greatly the old English dog, except in having shorter ears without feather; in being longer on the legs, which also are without feather; and in having more white in its coat, which is sometimes wholly white, except the head. It is seldom met with in England.

THE SOUTHERN IRISH WATER SPANIEL.

This breed, on the contrary, is more frequently found in England and Ireland, and is highly prized since it was brought to perfection by Mr. McCarthy. It is a very intelligent companion, capable of being broke to retrieve with facility, and a most useful general attendant on the gunner, though specially good at its own vocation in the water. Its height is about 21 or 22 inches, and its weight a little above 40lb.

THE HEAD capacious, forehead high, and eyes intelligent, though rather small. The face is clothed with short hair, over which hangs a top-knot of considerable length, coming forward to a peak; these two points being indicative of true breeding. Ears very long, measuring fully 26 inches across when extended.

THE BODY moderately long and very strong, covered with short crisp curls, which often become daggled towards the moulting season. The TAIL round

COCKER.

IRISH WATER-SPANIEL.

GREYHOUND

BLOOD HOUND.

without feather, terminating in a sharp point, and rather short. COLOUR a pure deep puce, without white.

In other particulars these dogs should resemble the ordinary spaniel, so that it is needless to recapitulate them.

Points: Head and nose, 20; top-knot and bareness of face, 10; ears, 10; feet and legs, 10; back and quarters, 10; symmetry, 10; coat and colour, 20; tail, 10.

DIVISION B.

DOGS WHICH KILL GAME WHEN FOUND FOR THEM.

In this division the only dogs used in Great Britain are the Rough or Scotch, and the English or Smooth greyhound. The former is now seldom met with in any degree of purity except in the highland districts of Scotland and Wales, where his rough coat is supposed to render him less obnoxious to cold than the smooth dog. In public coursing he has for some years been invariably beaten by the smooth greyhound, and therefore his use is confined to the districts I have mentioned, where the nature of the country forbids anything in the shape of coursing for sport, and "fox-hunting" is the order of the day. For this purpose he is well qualified, as he soon learns to stoop to a scent. In appearance he exactly resembles the deerhound, whose description is given under the head of Retrievers, but in action he may be known from that dog by the different carriage of the head. With the exception of his rough coat he closely resembles the English or smooth dog described at page 212.

SECT. 5.—THE ENGLISH GREYHOUND.

A minute description of the English greyhound has already been given at page 207 *et seq.*, and it is therefore useless to enter further into his qualities, external or internal. I append, however, what I consider the relative value of his points, so as to make this department complete as a reference. It varies a good deal from that of dogs whose breeding can chiefly be arrived at by external signs—*e.g.*, the stern, colour, and coat in the pointer and setter. In the greyhound, on the contrary, the pedigree is well known for many generations, and therefore, although the breeding may be guessed at from the appearance of the individual, it is far better to depend upon the evidence afforded by the "Coursing Calendar," or, if that is not forthcoming, to avoid having anything to do with breeding from the strain.

I should apportion the value of the several *points* as follows:—Head, 10; neck, 5; legs, 10; feet, 10; shoulders, 15; hind-quarters, 20; back, 10; general symmetry, 10; tail, 5; colour and coat, 5.

DIVISION C.

DOGS WHICH FIND AND ALSO KILL THEIR GAME.

The various hounds used in the present day for the pursuit of the stag, fox, hare, rabbit, and otter are no doubt descended from one common ancestor, the nearest type of which now existing is the bloodhound; and indeed, it is supposed by many high authorities that this dog is identical with the old Southern hound in all respects but colour. The latter was usually white, mottled with blue or badger colour, whilst the bloodhound has always been known to possess the deep black and tan by which he is now recognised.

SECT. 6.—THE BLOODHOUND.

Gervase Markham, in his "Maison Rustique," speaking of hounds, says, "The baie-coloured ones have the second place for goodnesse, and are of great courage, ventring far, and of a quicke scent, finding out very well the turnes and windings. . . . They runne surely, and with great boldnesse, commonly loving the stagge more than any other beast; but they make no account of hares. It is true that they be more head-strong and harde to reclaime than the white, and put men to more paine and travaill about the same. The best of the fallow sort of dogges are those which are of a brighter haire, drawing more unto the colour of red, and having therewithall a white spot in the forehead, or in the necke, in like manner those which are all fallow; but such as incline to a light yellow colour, being graie or blacke spotted, are nothing worth: such as are trussed up, and have dewclawes, are good to make bloodhounds."

THE COLOUR of the true breed is stated to be almost invariably a reddish tan, darkening gradually towards the upper parts till it becomes mixed with black on the back. A white patch on the body, a white face, or a streak

down it, proclaims a strain which is death to all hope of purity of blood. Some breeders prefer the body flecked white, and they hold that great purity is exhibited by the white tip at the end of the tapering stern. The COAT should be close, rather silky, short, and strong, approaching to the texture of wool at the bottom.

THE FOREHEAD is long and narrow, the eyes deep and sunk, but expressive, and showing the third eyelid or haw very plainly, which gives an appearance of redness to the eye. EARS very long and thin, hanging straight down—even when excited they never rise at the roots, but continue to hang straight down, as if the face were smiling. FACE and upper jaw to the nose, narrow; the nose itself very large, and the lips or "flews" long, thin, and pendulous, so that, like the ears, which meet at the point of the nose, they will join under the chin. The NECK remarkably long, and the THROAT rather hanging in its skin, or wrinkled, or what in hunting language is called "throaty."

SHOULDERS and FORE-LEGS very good, the legs being straight and powerful and the feet round and full. BACK and LOINS broad, and the ribs and chest deep, with the brisket well let down. The STERN well set on, long, very pliant or lashing, tapering to a fine point. Toe-nails, black.

The temper of the bloodhound is touchy, and when aroused he is very savage, but forgiving, and anxious in a moment after biting, by smiles and fawning, to express regret and ask forgiveness. The tongue when thrown is deep, mellow, and prolonged.

Height about 28 inches, but some well-known breeders fix the standard at not less than from 30 to 33 inches.

The *points* of the bloodhound may be estimated according to the following scale, viz.:—Head, 15; ears and jaw, 10; neck, 5; legs, 10; feet, 10; shoulders, 15; back girth and back ribs, 10; hind-quarters, 10; colour and symmetry, 10; stern, 5—total, 100.

The most celebrated breeders of late years have been Lords Yarborough, Fitzwilliam, and Faversham; the Hon. Grantley Berkeley; Mr. Jennings, of Pickering, Yorkshire; Mr. Cowen, of Blaydon-upon-Tyne; Mr. Harrison, of Dudley; and Mr. Holford, of Ware, Herts. Of the various dogs exhibited from the above kennels, Mr. Jennings's Druid, sold some years ago to Prince Napoleon, was in my opinion the best specimen of the breed, and I have accordingly reproduced him on wood Mr. Cowen's Druid was also a grand dog in his prime; but his head was not equal to that of Mr. Jennings's old favourite. Mr. Holford's Regent, a son of Cowen's Druid, was also a magnificent animal, and almost, if not quite, equal to Jennings's Druid. The artist has faithfully rendered the old dog as he appeared when first exhibited, and he must not be compared with the poor fellow as shown at Islington after he had been sent to France, being then already in the sere and yellow leaf.

THE STAGHOUND as a distinct breed is completely unknown in this country: all those packs which hunt the stag being pure foxhounds, with the exception of Lord Wolverton's bloodhounds, and Mr. Nevill's, who calls his "Black St. Huberts," but they seem to be relics of the old Southern hound.

SECT. 7.—THE FOXHOUND.

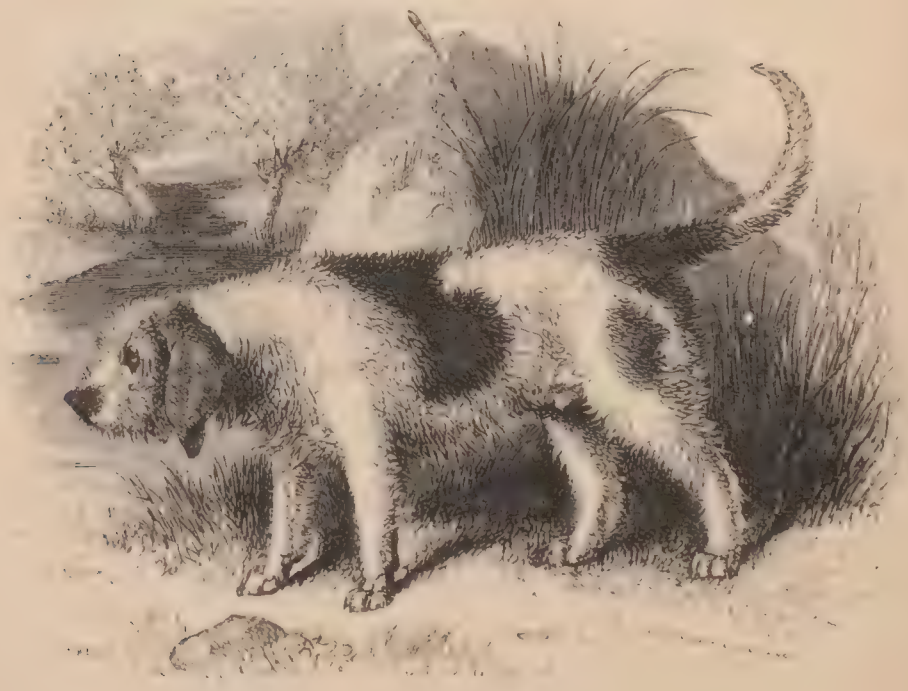
The modern foxhound has had more attention paid to his shape, and has been kept more pure, than any other breed of dogs in existence. Most kennels of any standing possess studbooks going back from eighty to a hundred years, and can trace the pedigree of every hound in their packs for that time. This is almost equal to that of the English thorough-bred horse, and far greater than that of the greyhound, few pedigrees of which go back in all their lines more than ten generations. "Cecil," in the "Hound Stud-Book," proves this statement without a doubt, and it makes the study of the various strains of the foxhound doubly interesting. I have already alluded to the general characteristics of the breed in page 142, and it is therefore only necessary here to describe his *points*, which are as follows:—

THE HEAD varies a good deal from the comparatively heavy form characterizing the Beaufort Grasper, to the snipe-nosed light shape of the Puckeridge. It should, however, in any case be light, airy, and sensible, yet full of dignity. There should be a slight tendency to chop without actual flew, and the forehead should be a little wrinkled. Circumference of skull in front of the

FOXHOUND.

HARRIER.

BEAGLE



OTTER-HOUND.

ears, 16 to 17 inches, and at least 4½ inches from the eye to the point of the nose. Neck long and clean; the least looseness or approach to throatiness is tabooed. Where it joins the head it must be fine, and gradually deepen towards the shoulders. Length of neck is necessary to allow the hound to stoop to a scent without losing pace. Ears set on low down, and carried close to the head—of course rounded. Total value, 20.

THE BACK must be straight, wide, and muscular, with an equally strong and square loin, very slightly arched. BACK RIBS especially deep and wide, not flat. CHEST deep, and at the same time, if possible, wide, increasing behind the elbows to at least 30 inches, sometimes 31 inches. SHOULDERS long, sloping, powerful, and elbows perfectly straight and well let down. Value —back and loins, 20; shoulders, 20.

THE FORE-LEGS, it is insisted by huntsmen, must be as straight as possible, without the slightest tendency backwards. This, however, I believe to be an exaggerated conception of the form which is best for standing work, as I have no doubt a very slight angle at the pastern is advantageous. The bone of the leg must be as large as possible, and the muscle of the fore-arm, as well as the tendons of the pasterns and toes, proportionably strong. If the foot is not perfectly straight it must turn in, not out. In shape it should be round and cat-like, but very highly arched toes are apt to give way. Sole hard and thick. Value of legs and feet, 20 points.

THE HIND-QUARTERS must be as strong as possible, wide as well as deep. Bone of pastern strong and large; hocks strong and straight. Value, 10.

THE STERN should be carried gaily upwards without hooping; it should be slightly rough beneath its lower edge, but not feathered; point straight. THE COAT should be dense, smooth, and glossy. COLOUR, black, white, and tan, black and white, or pied with hare, badger, red, tan, or yellow, which colours are preferred in the order I have given. Value, 10, in conjunction with the general symmetry.

Height from 22 to 25 inches; the best average is 22½ inches for bitches, and 24 inches for dogs; or for a mixed pack, 23 inches.

SECT. 8.—THE HARRIER.

The harrier comes next in order, and like the foxhound, this variety has been alluded to at some length at page 143. His head is heavier in proportion than that of the foxhound, and the ears are of thinner texture; they are sometimes slightly rounded, but the general practice is to leave them in their natural state. In other respects there is little difference between the two breeds, though the eye of the master will readily pick out a true harrier from a foxhound without seeing the head. The *points* are the same as in the foxhound.

SECT. 9.—THE BEAGLE.

The Beagle in shape is a dwarf Southern hound, and resembles that dog much more than either the foxhound or harrier. He varies so greatly in size that he must be described as of two different types.

The larger sort of beagle is full of symmetry, but he is apt to be "throaty;" and in other respects he resembles the old Southern hound reduced in size. Like him he has an extraordinary power of scenting. Even a cold scent appears evident to him.

The smaller beagle, known as the rabbit beagle, is the most elegant of the whole family. Many packs of these charming little hounds exist, where the standard is 13½ inches; and occasionally a diminutive pet example has been exhibited at our dog shows. Captain Hall, of Osmington Lodge, near Weymouth, hunts a pack of 12in. or a little over. Mr. Henry Pickard Cambridge, of Bloxworth, kept a pack, for driving his heath and furze country, about 13in. high: and he had amongst his hounds two or more couples of the rough beagles, closely resembling the otterhound in miniature. One of these, a bitch called Mischief, a black-tan and white hound, came from the kennel of a Mr. Hetty, near Cranbourne. These rough beagles have the full ear and a thorough hound character about them, but they have not the tongue. Their cry is sharp and ringing, but they have not enough of it. I believe them to be produced, or to have been bred, by crossing with rough terriers of some description, and that there is not, and never has been, a rough *true beagle*.

Yet for work they answer. They will face furze or brambles without flinching, and they are remarkably free from running hares. The smaller beagle is hardly ever used with the gun. It is kept entirely to rabbit-hunting; and a pack of six couples, not more than 9in. in height, will run down a rabbit in a few minutes. Hounds of this size must be very powerfully made to get through the thick furze brakes, and to keep up their work from eleven to four o'clock. They must be little working models of the foxhound, and they should be very powerful in their hindquarters. Indeed, the thighs and muscles in the best hounds appear out of proportion.

The beagle's foot is not required to be so round and cat-like as that of the foxhound and harrier, on account of his reduced weight and the lower speed at which he works. His cry is the most musical of all the hounds.

The *points* of the beagle are similar to those given for the foxhound, and I refer to the article on that animal for their numerical value.

Sect. 10.—The Otterhound.

This breed is still more like the old Southern hound than the beagle, being of the same size as the former, and only differing from him in having a long and rough coat.

The Head is heavier in mould and in its flews than that of the foxhound, eyes deeply set like those of the bloodhound, and with the same deep expression, often amounting to engaging; forehead long and narrow, but less so than that of the bloodhound; nose large and black, with a decidedly wiry-haired muzzle; lips ample and pendant. Ears large, thin, and coated with strong wiry hair, but not feathered at the edges like those of the spaniel or setter; forehead wrinkled deeply. Neck long and muscular, with a loose skin and some throatiness. Value: head, 15; ears, 10; neck, 5.

Chest deep but not wide; elbow let down very low; back ribs very deep; loins strong and straight, but looser than those of the foxhound; shoulders powerful and sloping. Value: shoulders 15; back and loin, 10; back ribs, 10.

Arms very large and powerful; ankles short, and the feet round, but more open than those of the foxhound; thighs large and strong, with powerful hocks. Value; hind quarters, 10; legs and feet, 10.

The Stern should be coated moderately, but not increasing, to the tip, which should be well pointed, whilst the root should be large; carriage like that of all hounds. Coat hard, wiry, and abundant; the colours may be black, white, and *pale* tan; mixed, or black pied, with the colours strongly linked with white. Value: stern, 5; colour and symmetry, 10.

The *origin* of this hound is uncertain, but he is most probably descended from the old Southern hound or talbot.

Sect. 11.—The Fox Terrier.

In the early part of the present century, when hunting the fox was considered of more interest than galloping after him, one or two terriers were added to the pack, and were not merely kept in readiness to bolt him from his earth when driven to ground by the hounds, but regularly drew each covert with them, and throughout the run followed the line as well as they could, being generally in at the death before the breaking-up was over. When, however, the fields of horsemen increased in numbers from two or three score to two or three hundred—when their riding became either a steeplechase between those who went straight, or a flat race among the "macadamisers;" and when hounds were bred fast enough to get away from all—the little terrier stood a poor chance of escaping with life and limb, and his services were confined to underground work, for which he is now kept handy to the part of the country which is to be hunted, his absence being supplied by the nearest rat or rabbit terrier that can be obtained. In cub-hunting he is specially serviceable, and, indeed, it is for this purpose that he is chiefly kept by the huntsmen of our various packs; for it is but seldom that a regularly entered fox-terrier attached to the pack is at hand when a fox is run to ground during the season.

There has been a good deal of controversy among those interested in this breed on the subject of the bull-cross, but the preponderance of evidence is certainly against it. The chief argument is that this cross makes the dog lie too close to his game, and punish

FOX TERRIER.

TRUFFLE DOG.

him too much if he can reach him, often absolutely preventing his bolting by hanging on to him. In any case it is admitted that the strain should not be made visible in the mouth, and that the teeth should be therefore quite level. What is really wanted is a dog small enough to enter any drain or earth which will admit a fox, and consequently not above 16lb. weight; while, to give him strength enough for the task which he has to perform, he should be at least 14lb.

THE HEAD should be flat and narrow forward, gradually widening towards the ears, which must be small, and fold over so as to keep out the dirt from their interior in digging, being also set on forward and carried close to the cheeks. Jaw strong and well clothed with muscle; mouth level and well furnished with teeth; eyes small, keen, and full of expression; nose pointed, long, and tipped with black. Head and ears, 10; nose, 10; jaw, 5; eye, 5—total, 30.

BACK rather long but strong; chest full and round, not deep; neck light and airy, coming nicely out of oblique but powerful shoulders; quarters and thighs muscular. Chest and back, 10; shoulders, 10; neck, 5; and quarters, 10—total, 35.

THE LEGS AND FEET must be strong and straight, in fact as nearly as possible resembling those of the foxhound himself. Legs, 10; feet, 10—total, 20.

THE SYMMETRY also must be appreciated on the same principle as that of the foxhound, but it is important as showing breeding and general fitness for work. Value, 10 points.

COLOUR, for which 5 points are allowed, is only to be regarded as leading to the dog becoming easily seen either under ground or above; hence there must be a preponderance of white.

With this external configuration the fox-terrier must be hardy in constitution so as to withstand cold, wet, and fatigue, and he must have that degree of courage which will induce him to face any amount of punishment. Possessed of all these qualifications this dog becomes an excellent companion independently of his use to the M.F.H., and the breed has been in high favour for this purpose since the introduction of dog shows: from 30*l.* to 60*l.* having sometimes been given for a prize-winner.

SECT. 12.—THE TRUFFLE DOG.

This dog is little known out of the districts which furnish the truffle, in our knowledge of which we are far behind the Germans, French, and Italians. Our continental neighbours are far more skilled both in the preservation and production of that esculent. They can dry it, or preserve it in oil, vinegar, or brine; and in neither case does the conserve lose much of its aroma, flavour, or nutritious quality. The market returns of Rome show that as much as 4,000*l.* a year are expended on these productions.

The truffle—an edible underground fungus—is classed by Berkeley with the *morel*, as one of the *Ascimycetes*, because in these, "spores" or organs of reproduction are arranged in *asci* (tubular sacs, or vesicles). It is found in many districts of France, Spain, and Italy. In this country it exists on almost every chalky down, especially where plantations of beech flourish, and in many gentlemen's parks, and on lawns. Hampshire, Wilts, Dorset, and Kent, all these counties produce truffles of rich quality and in great abundance. Beneath the beech, the cedar, the lime, the oak, the hazel, the Scotch fir, it is frequently to be found in clusters, one, two, or three feet apart. It is known to be in Tedworth (the seat of the late Mr. T. Assheton Smith); at Charbro' Park, Dorset (the seat of Mr. Drax); at Olantigh Towers, in Kent, and at Holnest House, in Dorset (both seats belonging to the same gentleman); whilst Kingston Lacey, in Dorset (the property of the Bankes family), produces both morels and truffles. Truffles are also found at Eastwell Park, Kent; at Sir J. Sebright's, in Beechwood Park; at Lord Barrington's; at Lord Jersey's; at Longleat, Wilts; at the Countess of Bridgewater's; and, we believe, at the Earl of Abingdon's seat, near Oxford.

In Italy, this fungus is hunted with a pig (a fact confirmed by Youatt;) in France, as with us, the truffle-hunter depends upon his dog. The breed is rare, and the men dislike to sell them. It is said that, about two hundred years ago, an old Spaniard brought two dogs into Wiltshire, and made a great deal of money by the sale of truffles which his dogs found for him; that at his death he left his money and his dogs to a

farmer from whom he had received some kindness, and that the hunters derive their dogs from those he left that farmer.

The truffle-dog is a small poodle (nearly a pure poodle), and weighing about 15lb. It is white, or black and white, or black, with the black mouth and under-lip of its race. It is mute in its quest, and should be thoroughly broken from all game. These are essential qualities in a dog whose owner frequently hunts truffles at night—in the shrubberies of mansions protected by keepers and watchmen, who regard him with suspicion.

These dogs are rather longer on the leg than the true poodle, have exquisite noses, and hunt close to the ground. On the scent of a truffle (especially in the morning or evening, when it gives out most smell), they show all the keenness of the spaniel, working their short-cropped tails, and feathering along the surface of the ground, for from twenty to fifty yards. Arrived at the spot where the fungus lies buried some two or three inches beneath the surface, they dig like a terrier at a rat's hole, and the best of them, if left alone, will disinter the fungus and carry it to the master. It is not usual, however, to allow the dog to exhaust himself in this way, and the owner forks up the truffle and gives the dog his usual reward, a piece of bread or cheese.

The truffle-hunter is set up in business when he possesses a good dog; all he requires besides will be a short staff, about 2ft. 6in. long, shod with a strong iron point, and at the other end furnished with a two-fanged iron fork. With this implement he can dig the largest truffle, or draw aside the briars or boughs in copse-wood to give his dog free scope to use his nose.

The truffle-dog is a delicate animal to rear, and a choice feeder. Being continually propagated from one stock, he has become peculiarly susceptible of all dog diseases, and when that fatal year comes round which desolates the kennel in his quarter, many truffle-hunters are left destitute of dogs, and consequently short of bread; for they will not believe (as I believe) that any dog with a keen nose and lively temper may be taught to hunt and find truffles.

The education of the dog commences when he is about three months old. At first he is taught to fetch a truffle, and when he does this well and cheerfully, his master places it on the ground, and slightly covers it with earth, selecting one of peculiar fragrance for the purpose. As the dog becomes more expert and keen for the amusement, he buries the truffle deeper, and rewards him in proportion to his progress. He then takes him where he knows truffles to be abundant, or where they have been previously found by a well-broken animal and marked. Thus he gradually learns his trade, and becomes (as his forefathers have been for many generations) the bread-winner for his master and all his master's family; unless he is so fortunate as to become *attaché* to some lordly mansion, or possibly to a royal palace, in which case he is a fortunate dog indeed.

With regard to *points*, as he is never shown, none can be laid down.

Division D.

DOGS WHICH RETRIEVE GAME THAT HAS BEEN WOUNDED BY MAN.

The dogs of this division are very useful, and in the present day, when driving and walking up game are practised extensively without pointers or setters, the retriever is an indispensable accompaniment to every shooter who indulges in this kind of sport. There is no distinct breed recognised, though the cross of the spaniel or setter with the small Newfoundland has become now quite as much so as the modern Leicester or Southdown sheep. Indeed the recurrence to this cross is seldom employed in breeding retrievers, males and females of that strain being chosen on each side. I have a great fancy that the modern rough St. Bernard, of which the Rev. J. C. Macdona possessed some magnificent specimens, would, if crossed with good setter blood, produce an excellent result. I intended to try the experiment, that gentleman having kindly given me a daughter of his celebrated Tell and Hedwig for the purpose, but unfortunately the puppy died of abscess in the head. Intelligence and docility are the qualities which must be looked for, and these are possessed by the St. Bernard in the highest degree, while the setter must furnish nose and the desire to hunt game.

CURLY-COATED RETRIEVER.

WAVY-COATED RETRIEVER.

Sect. 13.—The Retriever.

The modern retriever, as already stated, is now almost always a cross—that of the setter and Newfoundland showing the smooth or wavy coat and that of the water spaniel (generally Irish) with the Newfoundland having the coat curly. Very often the two kinds are intermixed, the result of which is a coat showing more or less of each texture. There has been a good deal of discussion on the relative value of these strains, and the question is by no means settled. My own impression is in favour of the smooth, wavy coat, indicative of the setter origin rather than the spaniel, as I believe this cross is more docile and better fitted to be broken to the extent of implicit obedience which is required. It is a great nuisance to have to work a retriever in a slip, but there are very few curly-coated dogs with which it can be dispensed with, whereas it is comparatively easy to do so with the smooth kind.

The Head of the Retriever should be long, wide, and flat, with a moderately large eye full of intelligence and docility; mouth capacious; ears small, lying close to the face and set low, with short hair only on them; nose large; neck long; and face covered with short hair only. Head, 10; nose, 10; ears, 2; neck, 8—total, 30.

The Loins and Back must be strong and firmly coupled, without which this big heavy dog soon tires, and as he sometimes has to carry a hare for half a mile, and to jump gates and brooks with her in his mouth, this point is of great importance. Quarters must be thick and clothed strongly with muscle. Shoulders strong and oblique; chest broad and also deep. Loins and back, 10; hindquarters, 10; shoulders, 6; chest, 4.

Legs long, straight, muscular; feet round and compact; toes well arched and not spreading; hocks powerful; stifles strong and wide. Value: feet 6; legs, 6; hocks, 6; stifles, 2—total, 20.

Coat either flat and wavy, or short, curly, and crisp; in dog shows there is generally now a prize for each kind. Colour either jet black without white; or liver, also without white; or black and tan; or black with brindled legs; or, lastly, whole brindled. Stern well feathered, rather short, but tapering to a point, and carried gaily but not over the back. Colour and coat, 15; stern, 5.

The Height should be at least 24 inches, weight from 70lb. to 80lb.

The Irish Water Spaniel, and the English dog of the same breed, are often used as retrievers proper, but I have classed them with the other spaniels, since they are generally used for seeking live as well as dead game.

Crosses of the terrier and spaniel, and true terriers, are also sometimes employed as retrievers; and, indeed, foxhounds, bloodhounds, and pure setters are occasionally broken to this trade.

Sect. 14.—The Deerhound.

The deerhound is a distinct breed, having been for many years employed to hunt down wounded deer, and, if necessary, bring them to bay till the deerstalker comes up to give the *coup de grâce* with bullet or knife. In the present day, as I have before observed (page 131), he closely resembles in appearance the rough Scotch greyhound, but having each been kept to its separate work they show their specific natures distinctly when taken to their respective game.

The Points of this dog are the same as those of the rough greyhound, except that he is at least 28 inches high, with a girth of 32 inches. In colour he must be fawn, yellow, brindled, or grey, with a rough coat, especially about the face. The value of his points may be placed as follows:—Head, 25; neck, 10; shoulders, 15; legs, 15; feet, 10; loin, 15; temperament, 5; coat, 5—total, 100.

Division E.

Useful Companions of Man.

Under this division are included those dogs which serve some purpose in their companionship, either as guards of man or his herds or flocks; thus, the Newfoundland, the mastiff, the St. Bernard, the bulldog, the bull-terrier and other large terriers, the colley and the drover's dog, all come under the designation, leaving the toy-dogs to the subsequent division.

Sect. 15.—The Mastiff.

The old English mastiff, as being a native of this country, should stand at the head of this division, though by no means so generally met with as the Newfoundland. Like the bulldog, he is peculiar to this country,

though a near approach to him, the Cuban mastiff, is met with in the West Indies and America. Whether any of the modern strains can be shown to be really indigenous in their origin it would be difficult to say, as their pedigrees cannot be traced for many generations. Mr. Edgar Hanbury, of Eastrop Grange, Wilts, and Mr. Lukey, of Lock's Bottom, Bromley, Kent, have bred the best specimens of the English mastiff of late years, and neither of these gentlemen can trace back their blood far enough to enable us to decide whether they are purely English or not. Mr. Hanbury commenced with a bitch without pedigree, but a beautiful animal. This bitch was put to a dog from Wales, also without pedigree, so that his kennel dates from his own knowledge. Mr. Lukey began with a brindled bitch bred by the Duke of Devonshire, which he crossed with Lord Waldegrave's celebrated dog "Turk," a black-muzzled fawn, of great courage and symmetry. The produce consisted of two brindled bitches, which he put to the Marquis of Hertford's Pluto, since which, for a long time, he bred in-and-in from their descendants. About a dozen years ago, however, he obtained possession of his magnificent stud-dog Governor, by Lieut. Garnier's Lion out of Countess, a daughter of Mr. Bruce's Duchess, and this dog has proved a most valuable sire, having been extensively used by Mr. Hanbury and other breeders. Mr. Hanbury's Prince, descended from Governor and Duchess, is a magnificent specimen, and quite as good as, or better than his celebrated sire.

The remarkable power and courage of the mastiff render him peculiarly fit to be the dog of the keeper, when associated with the fine temper which ought never to be dispensed with, since a savage mastiff is a dangerous brute, and should never be unloosed from his kennel. A well-broken one of good temper may be taken anywhere, and is far more trustworthy than the Newfoundland, and quite equal to the St. Bernard. The sense of smell is acute, and the mastiff has been known to draw up to a covey of partridges like a pointer.

THE HEAD should be massive, with a broad and flat forehead; ears small and wholly pendent, lying close to the cheek, though set on farther back than in the hound, pointer, and setter; eyes small, but mild and intelligent in expression; face short, with a square muzzle, not tapering towards the point of the nose; teeth level, but sometimes there is a slight projection of the lower; flews deep; neck muscular, with the head well set into it, showing a slight prominence at the upper point of junction.

BODY very large, with deep and wide chest, well ribbed up, and a powerful loin; legs straight, with great bone (this point is not generally well displayed, owing to confinement, as is also the case with all large breeds); feet round and close.

COAT short, and tail fine, but with a very slight indication of roughness—it should be carried high when the dog is excited; colour most to be desired is fallow (fawn), with black muzzle, and the richer the black the better; next to this comes brindle, then red with black muzzle, or black; sometimes there is a considerable admixture of white, but this is not desirable.

HEIGHT from 29 to 31 inches in the dog, and even more if a fine symmetry can be obtained, as in the dog represented in the woodcut, but his good shape is seldom met with in so large an animal; bitches are two or three inches lower. A dog standing 29 inches high ought to weigh, in good condition (not fat), from 120lb. to 130lb.

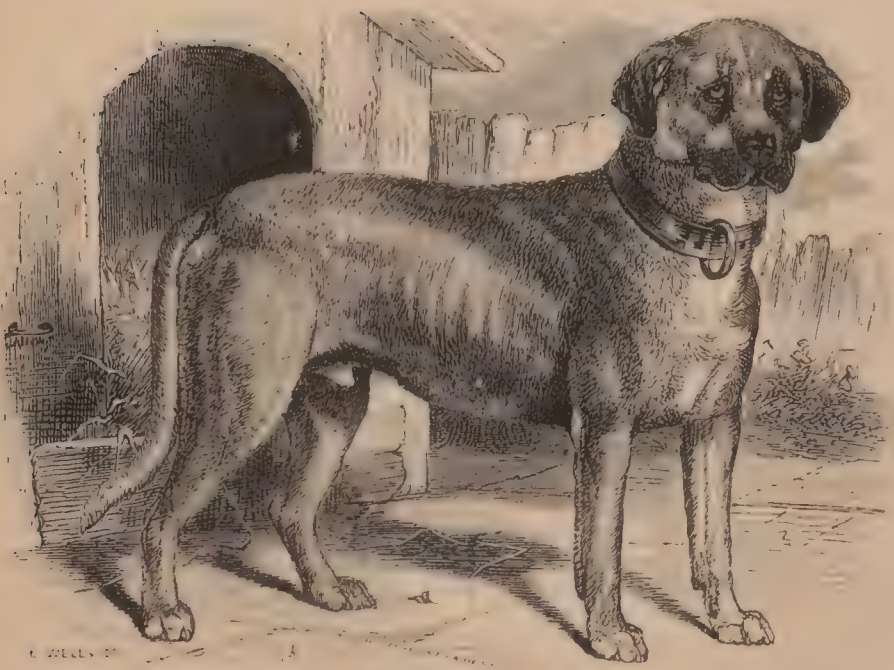
The relative value of the above *points* is: head, 30; flews and ears, 10; neck and shoulders, 10; back and loin, 8; chest, 7; feet and legs, 10; stern, 5; colour and coat, 10; symmetry, 10—total, 100.

The following are the dimensions of Mr. Lukey's Governor, whose portrait illustrates this article:—Height at shoulder, 33 inches; length, nose to tip of tail, 86; girth, 40; girth round loin, 31; round fore leg, $10\frac{3}{4}$; round thigh, 22; round head before ears, 28; skull, $9\frac{1}{2}$; muzzle, $5\frac{1}{2}$—conjoined, 15; ears, $7\frac{1}{2}$. Weight, 180lb.

SECT. 16.—THE NEWFOUNDLAND.

There are two distinct breeds of Newfoundland dogs, the large and the small, the latter being also called the St. John or lesser Labrador. The former—sub-divided into the Newfound-

THE DEERHOUND.



OLD ENGLISH MASTIFF.

NEWFOUNDLAND.

MOUNT ST. BERNARD.

land proper and the larger Labrador—is the most common in this country, and is a dog of massive form, possessing great character and intelligence. My own opinion, however, is that these breeds are so intermixed that they cannot be called distinct, and that though without doubt these several varieties are met with, they occur indiscriminately, and often two are met with in the same litter. "Index," who has studied the subject a good deal, lays it down in *The Field* that the three breeds may be known by the coat, as follows:—"The dog with long shaggy hair is the Newfoundland pure and simple, and recognised as such in both countries; the dog with the completely curly coat is the Labrador; and the dog with the close smooth coat is the lesser or smaller Labrador."

In his native country the Newfoundland dog is used as a beast of draught, being harnessed to sledges, which his great form, large feet and endurance enable him to draw over the snow, while his thick coat and hardy constitution render him little amenable to the effects of cold and wet. As a water dog he has no equal, and he floats or swims for hours without suffering from the immersion. His patronage of children, especially when in danger of drowning, is one of the most remarkable features in the canine race, and the way in which he suffers himself to be pulled about by them makes him, when not exceptionally ill-tempered, the pet of many a family. Still it will not always do to trust him, and I have known many examples which were absolutely dangerous even to their masters when excited by deprivation of food or anger against some offender of their own species.

THE HEAD in all three varieties is remarkably grand and full of character, with an expression of mildness and benevolence which is shared with this breed by the St. Bernard. Across the eyes the breadth is great, with a flatness behind them before which the skin is wrinkled, but without any perceptible forehead. Eyes small, bright, and intelligent, deeply set, but not showing the haws, which gives the appearance of being bloodshot, so remarkable in the bloodhound. Ears small and set low, hanging close to the face, and with little hair on them. Nose large, muzzle long and smooth; mouth capacious with level teeth. Neck shorter than in most breeds. *Points:* head, 30; neck, 10; temper, 20.

BACK often weak and slack in the loin, but this is a fault which, though common, is not universal. There is also very often a want of depth in the back ribs which ought not to be passed over. Back and loin, 10.

FEET AND LEGS large and muscular; the former being too flat for much work over hard ground, and are more adapted for the snow of his native land, or for swimming. Feet and legs, 10.

COLOUR black, or black and white, the former greatly for choice, with as little white as possible. Sometimes the black has brindled legs, or of a rufous dun colour, and occasionally fully bred dogs are met with brindled, or rufous dun mixed with white.

IN TEXTURE OF COAT there are several varieties. The smooth dog is almost as free from any approach to feather as a mastiff. If this dog has any tendency to feather, it will declare itself in profile just below the set-on of the head. His coat, if well examined, will be found more dense than a mastiff's, and of greater volume. The shaggy-coated Newfoundland has a smooth face, but within two inches of the skull the coat suddenly elongates, and except that he is very clean to the angle of his neck, he is thoroughly feathered in his outline. His coat generally parts down the back, and this parting is continued to the end of his tail. His hind-legs are close-coated from the hock, and his feet all round are nearly as free of feather as a cat's. Colour and coat, 10 points.

THE STERN is long and bushy, usually slightly turned on one side, and carried in a trailing fashion. The gait is rather loose and waddling, but this is a defect owing to the slackness of loin. Carriage, 5; stern, 5.

IN HEIGHT this dog is sometimes 33 or 34 inches, averaging 29 or 30.

SECT. 17.—THE ST. BERNARD DOG.

This breed has been so well described by an experienced hand in the *Field*, that I extract his account *verbatim*:—

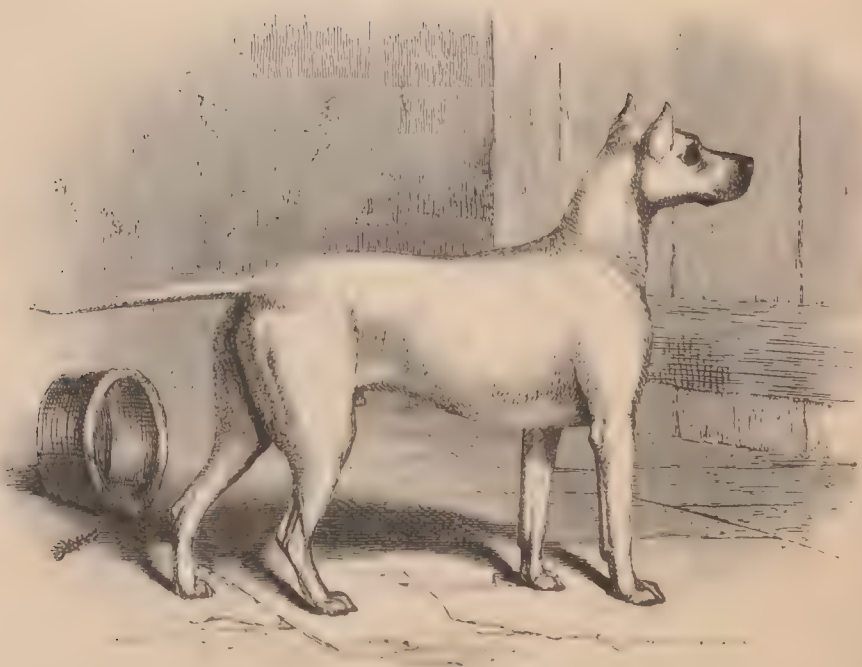
"About the year 962, Bernard de Menthon built two 'hospitia,' one on Mont Joux, where a temple of Jupiter stood—constructing his hospice from the ruins of the temple: the other on

the road that leads over the Grison Alps at Colonne Joux, so named from a column dedicated to the same heathen deity. The benevolent builder presided over both hospitia for forty years, and left to his monks the duty of affording refuge to travellers, and searching for those who were lost in the snow. St. Bernard's portrait with that of his dog on the same panel is still in existence, and the dog appears to be a blood-hound. The Hospice of St. Bernard Pass stands 7668 feet above the sea-level, and is undoubtedly the highest inhabited spot in Europe. Nine months in the year the snow is thick on the ground, and in the very worst part of winter from 1500 to 2000 of the poor inhabitants of the low countries pass over the mountains. During this inclement season all travellers from Martigny are desired to pass the night at the first house of refuge. Every morning a servant, accompanied by a St. Bernard dog, descends from the hospice to take all the travellers under his direction. The dog leads the way, for he can not only discover the buried traveller by his marvellous powers of scent, but he can also to a certainty keep the track, in spite of snow-storms and bewildering drifts. The dogs have been used by the monks in these ways, *and in no other*, for years; and they have acquired a well-deserved high reputation for perseverance, sagacity, and power of scent.

"The old breed died out many years ago, and we doubt whether the monks have possessed the present race of dogs more than forty or fifty years. About forty years ago, or a little more, all their dogs and several servants were swept away by an avalanche; but two the monks had given away were returned to them, and the breed was thus preserved. One of the St. Bernard dogs, Barry, a brindled and white one, saved the lives of forty-two persons, and was vigorous and active at the age of fifteen years, although they generally succumb to rheumatism in their tenth year. He is preserved in the Berne Museum, wearing an iron collar with large spikes, which had often protected him from the wolves. We are told he had discovered a man lost in a snow-drift, and, being mistaken for a wolf, the poor fellow received a blow on the head, and '*il était obligé de mourir.*'

"At the time we were the guests of the monks they possessed but three dogs, Barry, Pluto, and Pallas. The finest specimen had goitre or bronchocele, and wore a muzzle, as he was of an uncertain disposition; and a very fine bitch was expected soon to add to the strength of the company. Two dogs were placed out at some neighbouring hospice. We purchased a young dog at the Hôtel des Alpes (on our way home) from the proprietor; the mother had been procured from the hospice; the father was the finest specimen we had seen there. Subsequently we found him very intelligent and good tempered; he was very pleased to carry and fetch, and he appeared to have an excellent nose; but, alas! when nearly 12 months old, like Barry, '*il était obligé de mourir.*' All of these dogs were *orange tawny*; they had white legs, flecked *slightly* with orange, white belly, white collar round the neck; the head remarkably fine, majestic, and full of character; the ears small and set low; the eyes deeply set, a crease between them giving a mastiff character to the whole animal; from the eyes half-way down the face black, then suddenly white to the nose (which is black); the lips which are pendulous, spotted with orange and black; the white above the nose is continued in a blaze or streak up the forehead, and *extends in a narrow line down the poll, meeting the white collar round the neck.* The monks begged us to observe this peculiar mark, and compared it to the badge of their order—a white band or tape single behind, slit to pass over the neck and the two ends tucked into the black dress in front at the waist. Some very fine specimens, however, are brindled instead of orange tawny, and many have no white in the face at all, nor down the poll. The coat, which appears to the casual observer hard and smooth when closely examined proves to be very thick and fleecy, and it is well suited to repel cold by retaining the animal heat. The tail is bushy, but carried generally down between the hocks; and the gait or carriage of the dog much resembles the march of the lion.

"The character of the dog is majestic and important. He has that true nobility possessed by the highest type of Newfoundland. The same thoughtful



observant eye, the wide brow, the muscular neck, the enormous loin, and sinewy arms and thighs, and the large round arched feet and toes ('*pattes enormes*,' the monks called them), and that general intimation of power, and sense, and benevolence which no other domesticated animal possesses in the same compass.

"Tell, the noble specimen we have engraved, has the true form of the St. Bernard dog, and we believe him to be the best dog of his class in England. His owner, Mr. Macdona, proceeded to Switzerland, in the winter of the year 1864 to obtain at any cost the best specimen to be had for money, and after rejecting many fine examples, at length bought the only one that came up to his ideal. The dog was bred in Berne; his sire Hero, and his dam Diane, came from the Oberland, where the monks obtained a fresh supply of dogs when their old breed died out. Hero is a descendant of the famous Barry. The following are the measurements and weight of Tell:—

	ft.	in.
Height at shoulder	0	30½
Length from nose to tip of tail	7	0
Girth of chest	0	36
,, arm	0	13
,, head	0	22
Length of head	0	13

Weight, 147lb.

"He is a red or tawny brindle, the muzzle black, as far as the lower line of the eyes. Chest white. The two fore-paws white, the ankles white, belly white. Tail heavily feathered, and sometimes carried gaily. Hind-quarters beautifully furnished with coat. Head massive, eyes quick and intelligent, ears small and well set. He has *the peculiar slinging gait of his tribe*. He has *the retriever instinct*, and is very fond of carrying or retrieving from water. He is of the rough or shaggy-coated breed.

"There is, we are credibly informed, a smooth variety now existing. Captain Tyler's Thün answers this description. He is very large, and of the orange tawny colour, with little white, and is by Leo—Leo by Turk, who came from the monastery.

"The description of the St. Bernard dog here given is a repetition of the information afforded us personally by the monks, and we have formed an opinion of the class from the specimens the Hospice contained."

I should give *the points* of the St. Bernard as follows:—Head, 20; line down the poll, 10; frame, 10; feet and legs, 10; symmetry, 10; size, 20; dewclaws, 10; coat, 10.

It is a disputed point whether the smooth-coated variety or the rough-coated is the real breed. Mr. Macdona had both in his kennels. Except in coat, there is no difference between them. The double dewclaw is considered to be a mark of the true breed.

Sect. 18.—The Bulldog.

This dog is indisputably of British origin, and has never been permanently introduced into any other country. His courage is so great that it has become proverbial, and, with the exception of the game cock, there is no other domestic animal at all coming up to him. Independently of this quality, there is much difference of opinion as to the mental peculiarities of this breed. By some authorities the bulldog is stated to be quarrelsome and wantonly savage, so that he can never be made a safe companion; while others allege that he is mild and gentle in disposition, never showing his teeth until he is induced to do so by some special cause. As usual in such cases, the truth lies between two extremes. The bulldog is no doubt dangerous when his blood is up, and even his master runs some risk in meddling with him then, but he may generally be controlled with perfect facility, and he is mild, fondling, and gentle in his manner as a general rule. Still, he is not capable of strong attachment, and he cannot be taught more than the commonest forms of obedience. He is silent in his attacks, so that he does not make a good watch-dog. Formerly the breed was kept pure with great care for the purpose of baiting the bull, in which his tendency to pin the most vulnerable point (the nose) made him invaluable, no other dog having either the same desire to go at the head in preference to all other parts, or the same unflinching hold of the grasp when once obtained. Bulldogs have had their legs cut off after pinning a bull without letting go, and other equally horrible cruelties have been practised to show this peculiarity. In the present day, when bull-baiting is interdicted by act of parliament, the use of the bulldog

is confined to the improvement in courage of other breeds, by crossing with them, and in this way the greyhound is supposed to have been brought to perfection by Lord Orford and Mr. Etwall in England, and by Mr. Raimes in Scotland; but a later experiment made by Mr. Hanly has been entirely unsuccessful. The cross with the terrier is an excellent one for general purposes, as I shall presently show. The *points* of the bulldog are as follows, though there is some difference of opinion upon certain of them.

The Skull should be large and high and broad, the cheeks extending prominently beyond the eyes, and the forehead should be well creased or wrinkled, and flat. The Eyes should be black and round, not very large, situated in front of the head, wide apart, and neither prominent nor deeply set, the corners at right angles with a line drawn down the centre of the face. The "Stop" (which is an indentation between the eyes) should extend up the face for a considerable length. The Face as short as possible from the front of the cheek-bone to the end of the nose—deeply wrinkled. The muzzle should turn up. The Chop—that is, the fleshy part of the muzzle—should be broad and deep, and should perfectly cover the teeth. The Nose should be large and black. The Lower Jaw should project, and the nose should be set well back, and the lower jaw should turn upwards. The Neck moderately long, well arched, with a good dewlap. The Ears should be small and on the top of the head. Three descriptions of ear are permitted, called "rose," "button," and "tulip." The rose ears fold at the back, the tip laps over outwards, exposing part of the inside; the button ear falls in front, hiding the interior completely; the tulip ear is quite erect, and is allowed to be an undesirable form. Skull, 25 · ears, 5; eyes, 5; "stop," 5; shortness of face, 5; chop, 5; nose and jaws, 5; neck, 5.

The Chest should be wide and deep, the back short, wide across the shoulders, and not so wide across the loins; ribs round. Three should be a slight fall behind the shoulders, and the spine should rise at the loins, falling rapidly to the stern, and well arched. The Stern should be moderately thick where it joins the body, and be fine to the point. It should have a decided downward carriage. I prefer a tail of a moderate length, decidedly objecting to a long tail having a curve at the end, commonly called the "ring tail." The tail should be low in its setting-on also. Chest, 5; body, 5; stern, 5.

The Fore-Legs should be strong, muscular, and straight; they should be short, the elbow well let down. The Hind-Legs should be rather longer in proportion than the fore legs, so as to raise the loins; and, in direct opposition to the established opinion of connoisseurs, I prefer the hocks to be straight, and that the stifles should not turn out which must be the case if the hocks approach each other. The Fore-Feet should be well arched, they should be moderately round, and the toes should be well split up. The feet should turn neither in nor out; they should be small, and the hind-feet should be of the same character. Legs and feet, 15

The Coat should be fine and smooth. The Colour should be whole or unmixed and may be red, red-smut, fawn, fawn-smut, fallow, fallow-smut, or blue-fawn or white, the last being preferred. With all these points and properties he must be Symmetrical. Coat, 5; colour, 5.

His action is rather slovenly, his hind legs not being lifted high as he runs. He varies in weight from 15lb. to 60l

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Sect. 19.—The Bull Terrier.

The bull terrier is, like the bulldog almost peculiar to this country, and indeed in the whole family of terriers is pre-eminent. This breed is known in the hardware and pottery districts where it is carried to high perfection as the "half-bred" *par excellence;* and Mr. Hinks, of Birmingham, may lay claim to having carried off the highest honours from his competitors with his succession of Madmen, Puss, Tartar, &c. This dog is used chiefly for fighting which is still privately carried on by his patrons, but the breed is equally good for attacking the badger, and other hard-biting vermin, requiring less courage and more quickness and docility than are possessed by the pure bulldog. Hence he is a great favourite as a companion of young men, whether military or civilian, and as he can make himself generally useful, he is popular also with the groom and the workman. The first cross is generally too much like the bulldog, but the second shows

SMOOTH AND ROUGH TERRIERS.

THE SKYE TERRIER.

in perfection all the attributes required for the purpose I am alluding to. In weight he varies from 9lb. up to 35lb. or more. In general appearance he resembles the terrier, except that he is wider across his skull and possesses more strength and stamina. A loving and gentle temperament is of great importance.

His HEAD should be long, the muzzle sharp, the jaw level—not underhung, which is a disfigurement, and also prevents a dog punishing his adversary. The under jaw should display great power, and the neck should be long. Head, 25 points; neck and ears, 10.

THE CHEST is wide, the shoulders sloping and powerful, the loin and back strong, the hind quarters and thighs muscular. The tail should be fine and sting-like, but not bare; carried gaily, but not "hooped." Chest, 10; shoulders, 10; loin, 10; tail, 5.

THE FEET AND LEGS should resemble those of the hound in shape. Value, 10.

THE COAT throughout is fine and short, and it should lie smoothly, as in a well-dressed racehorse. Pure white, with a black nose and eye, is the most approved colour. Next in merit I should place white with coloured ears, or a patch on the eyes. I believe all the best judges entertain a strong preference for the white dog; but in any case the colour should be "whole," that is, unmixed with white, unless the dog be all white, which is in that case considered a "whole" colour. If coloured it should be either red, red-smut (that is, red with black muzzle), fawn or fawn-smut, fallow or fallow-smut, brindled, white, blue-fawn (that is, fawn with blue muzzle), or pied with any of those colours. Coat and colour, 10. SYMMETRY, 10.

SECT. 20.—TERRIERS.

The family of pure terriers is a large one, and includes besides the "toys," the Scotch, Skye, and Dandie Dinmont in Scotland, the Bedlington in the north, and the various strains of smooth terriers in England. Of late years the Scotch broken-haired dog has been by selection converted into an animal possessing a silky and comparatively long and wavy coat, utterly unlike his ancestry. The sub-divisions are now almost endless, but the above-mentioned breeds are the leading ones, and to them I shall now confine myself, leaving the toy terriers to the next division.

THE SMOOTH ENGLISH TERRIER (*not black-and-tan*).

The smooth terrier is possessed of a merry and active temperament, combined with a good nose, and is the model of a vermin dog where there is no badger or otter to attack; but for these he is scarcely fitted in power, and as a rule he will not face them at close quarters. Elegant and graceful in his outline, he shares with the bull-terrier the patronage of young men, with whom his companionable qualities make him a favourite in-doors as well as out. He may weigh from 6lb. to 10lb., or even 20lb.; but, provided he is large enough for his calling, he cannot be too small. It is an advantage to keep down the size of certain dogs as much as possible, and we ought to consider that two small terriers will do more than double the work of one large dog, whilst they consume no more.

THE HEAD is narrow, long, and flat. The muzzle fine, tapering, sharp, and fox-like; but the jaw must be muscular, and the mouth *never* underhung. It is better that the upper jaw should be slightly in excess, if there is the least deviation from a level mouth. The "stop," or indent between the eyes, must be evident and "pronounced." The eyes must be sparkling, bright, but not large. The ears round, flat to the head in repose, but raised, although falling over, when the dog is roused: a tulip or prick ear is a great deformity, and betokens mongrel family. It has been the fashion to crop the ears of terriers for many years, and the eye has become so accustomed to it that many good judges will scarcely look at a terrier unless he has been scientifically cropped. In large towns it is not the fashion to shorten the tail at all when the ears are cut, whilst country sportsmen leave the ears but shorten the tail. The neck should be long, tapering, and muscular, and clean where it joins the lower jaw. Head, 25; neck, 10.

THE RIBS must be round, the shoulders deep and well set back, and as powerful as possible, enabling the dog to grapple with his foe or to dig him. The loins must be strong and the back ribs deep. In conformation his body must be neither high nor wide, but well

knit together—*multum in parvo.* Chest, 10; shoulders, 10; loin, 10.

The Fore-Legs should be straight as arrows; the feet strong, the toes moderately arched and well split, and the form of the foot should be round and fox-like. The thighs should be large and muscular, the hocks in a straight line, and the hind-legs should be moderately straight also. Value of legs and feet, 10.

The Tail must be very fine, with a low carriage, but *not bare;* and when a dog is excited it is carried gaily; 5.

The Best Colour is white, when used for ratting, as it is more easily distinguishable than any other, and there is the same advantage as to colour when the dog's services are required for rabbit-hunting. Smooth terriers may be found of other colours—yellow, yellow and white, hound-pied, black, or fawn. A beautiful blue or blue-fawn variety exists, said to be crossed with the Italian greyhound. Brindle colour is a sign of bulldog cross. Coat and colour, 10; symmetry, as in the bull terrier, 10. Whether coloured or white, his coat should be smooth yet hard, and he should be perfectly free from the very least roughness, or anything approaching coarseness of coat about his muzzle, eyebrows, thighs, or any part of his profile.

The Black-and-tan Terrier.

This is perhaps the oldest among our breeds of smooth terriers, of which, indeed, some persons consider black-and-tan to be the only true colour. The general remarks on the smooth terriers which we have just given will apply in the main to this variety, subject to the following additions:—The Skull should be flat and narrow between the ears; the eye small and black; the nose black; the ears, if not left on, must be well cropped, erect, and long; if entire, they should be small, not tuliped, and free from any tan behind. The tail must be fine, carried straight, and not curled.

The Colour, which is a principal point, must be raven black, with rich mahogany tan, well pencilled on each toe; the tan should be clear, and free from any admixture of black. Above the eyes there should be a distinct spot of tan. The body should be black, with a rich tan on the fore-legs half-way up them. The breast should have two distinct marks of tan. The jaw should also be well tanned up the gullet, and the cheek divided having a small tan spot a little less than that over the eyes. The upper jaw should also be nicely tanned, and run in conformity with the tanning on the lower jaw. The hind-legs should be perfectly free from tan on the outside, but on the inside there should be some tan. The vent should have a small tan spot, and there should also be tan half-way up the tail.

The Weight varies from 10lb. to 25lb.

The *points:* colour, coat, and correct markings, 40; head, 25; eye, 5; neck, 5; chest, 5; shoulders, 5; loins 5; feet, 5; tail, 5.

Rough or Broken-haired Terriers.

Rough Terriers are no doubt all descended from the broken-haired Scotch dog, with which all must be familiar, but whether the modern silken hair has been developed by crossing with the Maltese, or by selection, is a moot question. In general shape this dog resembles the smooth variety, but he is slightly longer in frame, and not so elegant in his proportions. The chief peculiarity is in coat and colour. The roughness of coat about the muzzle and face makes the head look larger, and takes off a good deal from the lively looks so remarkable in the smooth dog. The old-fashioned hard and wiry-coated dog is, I believe, more game than the silky-haired dog now in fashion; but no doubt the latter is a very elegant animal, and well suited for the bar-parlour, where he is extensively patronized. The modern favourite is of a blue colour, with rich fawn (approaching to a tan) legs, the under parts being all of the latter colour. The tail is carried higher than that of the smooth dog. In the old-fashioned strain the colours are either grizzled black, with pale tan spots, or generally of a grizzled black-brown, sometimes quite grey and constituting the pepper-and-salt colour. Sometimes the broken-haired dog is white, more or less marked with blue, or some other colour, but the less the better.

As to Broken-haired Terriers there is great difference of opinion. I will therefore describe the points of the two varieties in most esteem, beginning with those chiefly bred in Yorkshire and adjacent counties, as

DANDIE DINMONT TERRIER.

THE BEDLINGTON TERRIER.

these, up to the present time, have distanced the Scotch terrier at our great shows on account of their taking appearance in the eyes of the general public. The Scotch terrier proper is, however, superior in point of usefulness at home and abroad, and when the two are shown together it should be preferred—shape, make, and colour being equal.

Of the Yorkshire Dog the points are the same as regards shape and make as the smooth English terrier; but the coat differs in being long, and of three different shades—that on the back being a blue slate; the face, head, and legs a silky silvery fawn; the whole undermined by short tanned hair. The older the dog the more silvery he gets.

The Scotch Dog is also the same in shape. His colour may be pepper or mustard, or pepper and mustard; in each case more or less mixed with salt.

The toy dog of these strains is the same in all but weight, which should not exceed 7lb.; the smaller the better.

The estimated value of their *points* is as follows:—Head, 15; neck and ears, 10; shoulders, chest, and loins, 20; feet and legs, 10; colour and coat, 30; symmetry, 10; tail, 5.

The Skye Terrier.

This dog is, with the exception of the turnspit, and his foreign representative, the barbet, the longest of all dogs in proportion to his height. From the nose to the tip of his tail, when extended, the Skye should measure at least three times its height, and sometimes it is met with three and a half times as long. At the same time its coat is so developed that its shape is really very like the door-mat to which it is so often compared—ears, legs, and tail all merging in one mass, with the exception of the tip of the latter, and of the feet. In a well-coated specimen the eyes are only to be guessed at, and even the nose is often obscured; but generally they are each more or less visible on a close inspection.

The Head looks large from the profusion of hair with which it is invested, but it is not really so. Its shape is not easily got at, but it is somewhat wide, while the neck is unusually long. The eyes, which are from the same cause scarcely visible, are found, on separating the overhanging hair, to be keen, expressive, small, and generally of a dark colour, either black or brown, as are the nose and palate. The ears are of good size, that is, about three inches long, clothed thickly with hair, which should mingle with that of the face and neck, and decidedly, in my opinion, should fall, but not quite close to the cheek, owing to the quantity of hair by which they are surrounded. Many breeders, however, prefer the prick ear, asserting that the strains possessing it are harder and better at vermin. The mouth must be level, with a large and black nose.

The Body is too much coated to show its shape, and the form of the shoulder and back ribs can only be ascertained by handling.

The Fore-Legs are generally more or less bandy; there are no dewclaws, and the feet are not very strong, having a tendency to flatness, and thinness of the soles.

Tail long, and carried horizontally, but with a sweep, so that the tip is a little below the level of the back.

Weight from 10lb. to 18lb., the bitches being nearly as heavy as the dogs—perhaps about 2lb. less.

The Colours most fancied are steel with black tips, fawn with dark-brown tips to the ears and tail, dark slaty-blue (slightly grizzled, but without any absolute admixture of white), black, and pure fawn—the order we have named being in accordance with the value of each.

The Hair should be long, straight, and shining like that of the tail of the horse, any appearance of silkiness, woolliness, or curl being to be avoided, excepting on the top of the head, where it may have a slight tendency to the first-named condition.

The *points* are: coat, 25; colour, 20; head, 10; ears, 10; length of body, 10; carriage of tail, 10; symmetry, 15.

The Dandie Dinmont.

This dog resembles the Skye terrier in general appearance, but there are several points of great importance by which the two may be distinguished. As stated in the *Field*, and not contradicted, Sir Walter Scott was the first to draw attention to this breed in the second of the Waverley series of novels, in which Dandie Dinmont, of Charlieshope, is introduced as the owner of "auld Pepper and auld Mustard,

and young Pepper and young Mustard, and little Pepper and little Mustard," which he had "a' regularly entered, first wi' rottens, then wi' stots or weasels, and then wi' the tods and brocks, and now," as he said, "they fear naething that ever cam' wi' a hairy skin on't." According to this high authority in matters canine, therefore, the dog of his day was a good vermin-killer, and so he remains to this day. The original of this strongly marked character was a Mr. James Davidson of Hindlee, holding from Lord Douglas a wild farm on the edge of the Teviotdale mountains, bordering closely on Liddesdale. He was an ardent fox-hunter, according to the fashion of the district, which is detailed at length in the twenty-fifth chapter of "Guy Mannering," and which, as Sir Walter remarks, was conducted in a manner to "shock a member of the Pytchley Hunt"—the fox (tod) being coursed by an indefinite number of "large and fierce greyhounds," when driven from his earth by the "terriers, including the whole generation of Pepper and Mustard," together with "mongrel, whelp, and cur of low degree." Excepting, therefore, by tradition, the Dandie Dinmont terrier can only be traced back about three-quarters of a century. Mr. Macdona (of St. Bernard fame) has obtained access to a curious document in Mr. James Davidson's handwriting (dated 1800), which was sent to the Hon. George H. Baillie of Millerstown, as follows :—

"Tuggin, from A. Armstrong, reddish and wiry; Tarr, reddish and wire-haired, a bitch; Pepper, shaggy and light, from Dr. Brown of Borjenwood. The race of Dandies are bred from the two last.—J. D."

Mr. Macdona, in a letter to the *Field*, dated Nov. 2, 1869, concludes "from this, that Dr. Brown, of Borjenwood, gave Mr. Davidson, in the year 1800, Pepper and Tarr, and that this couple were, without doubt, the first parents of all the true-bred Dandie Dinmonts, being the original stock from whence all Mr. Davidson's generations of Mustards and Peppers sprang." And in this conclusion I think him perfectly right.

Of late years the most celebrated strains have been those of the Duke of Buccleuch, obtained direct from James Davidson; Sir G. Douglas, of Springwood Park; Mr. Stoddart, of Selkirk; Mr. Frain, of The Trews; Mr. M'Dougall, of Cessford; Mr. Somners, of Kelso; Dr. Brown, of Melrose; Mr. Aitken, of Edinburgh; Mr. Hugh Purvis, of Leaderfoot; Mr. Nicol Milne, of Falconside; and Mr. Bradshaw Smith, of Ecclefechan.

The *points* of the Dandie are as follows :—

HEAD large and long, with immensely strong jaws and teeth, which are quite level, and the nose cut short like a pointer's. The head of the bitch is generally much smaller than that of the dog, so that they may be distinguished by a glance.

EARS pendent, from 3 to 4 inches long, and hanging close to the cheek, as the hound's or beagle's, but not so broad or round at the point—more in the shape of an almond or filbert.

EYES full, bright, and very intelligent.

NECK well developed, and rather short.

BODY long, but not quite so long as that of a good Skye, being about 2½ times the height, with low shoulders, and the back slightly curved down behind them, with a corresponding arch of the loin.

LEGS short, particularly in front, with extraordinary bone and muscle in proportion to the size.

TAIL slightly curved, and carried over the back in a hind-like manner, with little or no feather on it.

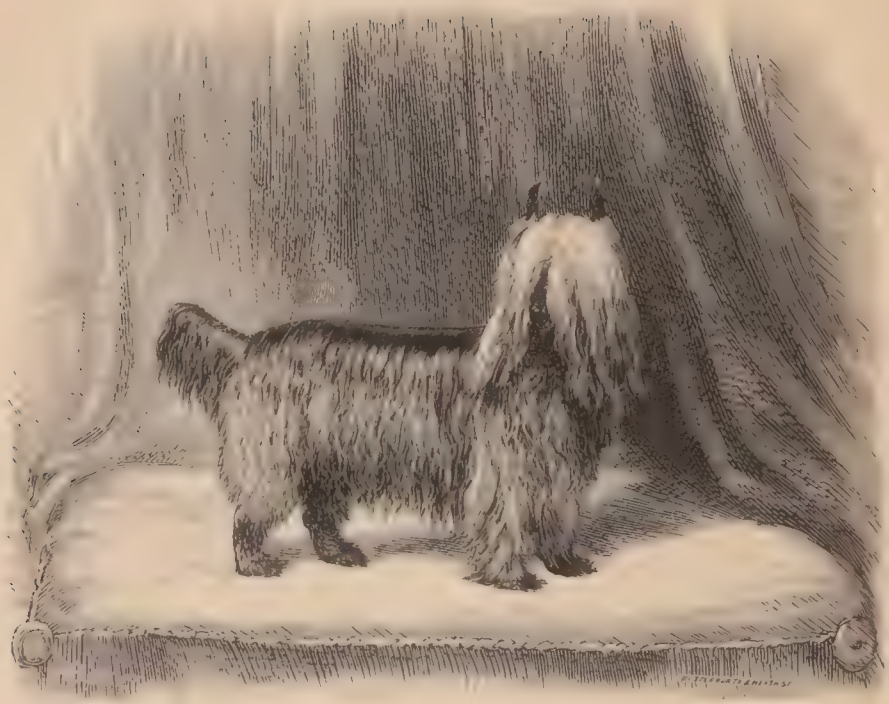
HEIGHT from 10 to 12 inches to top of shoulder; it may be less, but it should not be more.

COAT, a mixture of hardish and soft (but not silky) short hair—what old John Stoddart used to term a "pily coat"—with the head more or less covered with soft and silky hair (which is generally of a lighter colour than that on the body); and the legs and feet partake to a slight extent of the same soft silky hair.

COLOUR, either "mustard" (reddish-brown) or "pepper" (bluish-grey), or a combination of both, in which case the back is of the latter colour, while the legs, inside of ears, chest, and under side of tail are "mustard," verging on a pale tan or fawn colour.

WEIGHT, from 13 to 18 pounds.

The *points* are: head 15; ears, 10; eyes, 5; colour, 20; coat, 20; symmetry, 10; feet and legs 10; carriage of tail, 10.



THE BLUE-FAWN OR HALIFAX TERRIER.

COLLY DOG.

The Bedlington Terrier.

This breed of terriers has lately come into notice, and special prizes have been offered for it at various shows, but as I have not seen any good specimens of it, I must depend on others for the following description :—

"The model Bedlington should be rather long and small in the jaw, but withal muscular; the head high and narrow, and crowned with the tuft of silky hair of lighter colour than the body; the eyes must be small, round, and rather sunk, and dull until excited, and then they are 'piercers;' the ears are filbert-shaped, long, and hang close to the cheek, free of long hair, but slightly feathered at the tips; the neck is long, slender, but muscular, and the body well-proportioned, slender, and deep-chested; the toes must be well arched, legs straight, and rather long in proportion to the height, but not to any marked extent; the tail varies from 8 to 12 inches in length, is small and tapering, and free of feather. The best, and indeed only true, colours are—first, liver or sandy, and in either case the nose must be of a dark brown flesh colour; or, secondly, a black-blue, when the nose is black.

The *points* of the Bedlington are, head and jaws, 15; ears, 5; eyes, 5; nose, 5; teeth, 5; neck and shoulders, 10; body and loin, 20; legs, 5; feet, 5; coat, 10; colour, 5; tail, 5; weight, 5—total, 100.

"The 'linty-haired,' 'flaxen-coloured' terrier is common enough, but then he was never promoted to the dignity of 'Bedlington terrier,' except through courtesy. The breeding in-and-in is deemed injurious beyond one strain."

The Blue Fawn or Halifax Terrier.

The blue fawn or Halifax terrier is a modern breed by comparison with its competitors. Mrs. Foster, of Bradford, has for years carried all before her at the show bench, chiefly with the descendants of Huddersfield Ben. These dogs are left in a state of nature until within a short time of the show, their feet only being protected by stockings. They are then soaked and washed out carefully, with the result which is well shown in the engraving.

The *points* are, symmetry, 15; colour, 30; coat, 30; ears, 10; tail, 5; condition, 10—total, 100.

Sect. 21.—Sheep Dogs.

The sheep dog has undoubtedly a higher commercial value than any other, as he has often under his charge a flock worth thousands of pounds. There are various breeds in use throughout the United Kingdom, some smooth, but the majority more or less rough. The most distinct of these is the Scotch colley. I do not place much reliance upon the value of the *points* in the breed, but they may be put nearly as follows:—Head, 25; ears and eyes, 10; shoulders, 10; chest, 10; coat, 10; colour, 10; back and loin, 10; feet and legs, 15; symmetry, 10.

The English Rough Dog has nearly always a wiry muzzle, and a good useful hard coat of hair over his whole body. The best specimens are not so long in the leg as the generality of dogs, and when they have tails they carry them lower than the Scotch dog. They have good feet and legs, and are possessed of iron constitutions. In those districts where large numbers of sheep are kept, great attention is paid to their education, and a good sheep dog is considered as indispensable to the well-doing of a flock as a good shepherd.

The Scotch Colley, or Highland sheep dog, is a far more graceful animal, and his sense and intelligence are equal to any breed of dogs in the world. Two races are to be found in Scotland—the rough and the smooth. The rough or shaggy-coated colley is the most choice description; for his impenetrable warm thick coat is a good protection to him when his duty calls him to face the storms and mists and snows of the wild mountains, especially when the stragglers of his flock have been covered by the snowdrifts and he goes in search of them with his master. He has a fine fox-like muzzle; full, expressive, but rather crafty eyes; small ears, drooping forward, and the mask of his face is smooth. From the base of the skull the whole of the neck and the entire body are protected by a deep, warm, long coat of various colours—sometimes black with tan points; sometimes sandy, or of various mixed greys, some of which are singularly beautiful and picturesque. There is generally a very fine white line down the forehead, not amounting to a blaze, as

in the spaniels. His legs (especially the hind-legs, from the hocks) are bare, that is, not feathered; and for many years authorities on the dog have described the colley as having one, or even two, dewclaws on each hind-leg, which is indeed generally the case. His neck is long, and rather arched; his shoulders are set well back, and are very powerful; the elbow is well let down; the fore-arm is short; the ankles or pasterns are long, and rather small for his size; and the feet are round, arched, and have excellent thick hard soles; the chest is deep, but rather narrow; he is broad over his back; his loins are well arched; the hips are wide; his thighs are muscular, and he is inclined to go rather wide behind; the tail is very bushy and large, and carried up when he is in motion, and when he is controlling his excitement it is turned over his back.

The Smooth Scotch Dog is generally of a sandy colour, although occasionally he may be met with of the black-tan or mixed tints.

Sect. 22.—Pomeranian, or Spitz.

Like the St. Bernard, the Pomeranian can scarcely be called a dog of the British Islands, but it is likewise now so common as to be almost naturalized among us. It resembles, in shape of body and head, the Scotch colley, but is a size smaller, carries the tail over the back, and is generally of a pure white colour. The ears also are more pricked, being quite fox or wolf-like in their character. Hence it is often called in France by the name *lou-lou*. No *points* have been assigned to this breed as yet.

Sect. 23.—The Dalmatian Dog.

This dog is now so common in this country, that it is completely naturalized. The principal points are that the whole of the body should be one mass of black or liver-coloured spots, about the size of a shilling, on a white ground. Any running of the colour into the white is very objectionable; in fact, a very lightly-spotted dog, if distinctly marked, is preferred to one whose spots run into the white, and give it a grisly appearance. The ears and tail should also be clearly spotted; but this is of very rare occurrence. The shape and make of the dog should be as much like the large-sized bull-terrier as possible. As regards fancy, the black-spotted is preferred to the liver-spotted variety, the latter being more delicate, and not so effective in appearance. The *points* are: marking, 50; colour, 30; symmetry, 20.

Division F.

Ladies' Toy Dogs.

Fashion changes her toy dogs just as often as her costumes, and the favourite of one year is turned into the streets (metaphorically) the next. Poodles, spaniels, terriers, Italian greyhounds, and pugs, have each had their reign, but at present it would be difficult to determine which has the pre-eminence. As a rule, the short-haired dog makes a better drawing-room pet than his long-coated rival, and especially when his skin is peculiarly free from smell, as is the case with the pug dog and Italian greyhound. Hence it is no wonder that these little animals fetch 30*l.* apiece, though we have known 50*l.* paid for a King Charles spaniel; and this being the highest sum I ever heard of as paid for a toy dog, I shall commence with that breed.

Sect. 24.—King Charles Spaniel.

The King Charles is now always either black and tan without white, or a mixture of these colours in handsome patches, the tan spot over the eye in the latter case being always an important feature. In the time of Charles II., from whom the dog gets his name, the colour, as shown by Vandyck, was liver and white, which colour was in vogue until the present century, when the black and tan superseded it, and is now considered the speciality of the breed. Nor is the modern shortness of face of old standing when carried to the extreme which now prevails. Vandyck's dogs are quite sharp-nosed, and those which I remember early in the present century were at least only half-way on the road to the state in which they are now exhibited, with faces like those of the bulldog. At present the dog should weigh about 7lb. (not more than 10lb.) Perfection in shape is seldom attained below 7lb., but if it can be obtained in smaller compass so much the better.

The Skull should be round, and the eyes large, with a deep indentation or "stop" between them. The lower jaw

POMERANIAN AND PUG.

MALTESE DOG.

KING CHARLES AND BLENHEIM SPANIEL.

FOX TERRIER AND ITALIAN GREYHOUND.

should project beyond the upper, and turn up. Any protrusion of the tongue is most objectionable. Large ears "touching the ground" are highly esteemed; but this is a figurative expression. They must droop close to the head and be thickly coated.

THE LEGS must be densely feathered at the back, and the feet must be almost lost in the feather, which ought to project beyond the nails. The dog should stand on short legs and appear compact.

HIS COAT should be silky, straight, very abundant, and of the richest colour. The black should be intense, the tan vivid and rich. The dog should be altogether free from white. He should have tan of this rich red quality on his cheeks and the inner margin of the ear. His lips should be tan, and he should have a spot of the same colour over each eye; the larger this spot is the better. His cheeks should be well tanned, also his chest or "mane," all his legs, his belly, the feather of his haunches, his vent, and the under plumage of his tail, which should be carried low.

The following scale of *points* is in general acceptation:—Form of head, 10; nose and formation of jaw, 10; eyes, 10; ears, 10; coat and texture, 10; form and compactness, 10; brilliancy of colour, 10; feather of legs and feet, 10; size and weight, 10; carriage of tail, 10—total, 100.

SECT. 25.—THE BLENHEIM SPANIEL.

The following description of the Blenheim spaniel appeared in the *Field* of Sept. 15, 1866:—"This drawing-room favourite derives his name from the celebrated seat of the Dukes of Marlborough, where he used to be carefully bred; the town of Woodstock being some years ago the fountain-head for pure Blenheim spaniels, which could also be purchased wonderfully small and well marked at Oxford about twenty-five years since.

"It is very difficult indeed to trace the origin of this dog, which, judging from Vandyck's pictures, was cherished at Court in the days of Charles I. Sir Godfrey Kneller, we have heard, has painted small red-and-white spaniels at the feet of several Court beauties, or nestling in their laps. We are also informed that portraits from his hand are to be seen at Blenheim Palace and Arundel Castle, and that the small 'comforter' of this colour was in favour in the reigns of Charles II., James II., and up to the end of the time of Queen Anne. It has been called the 'Marlborough spaniel' by some authors, who assert that it was first crossed with the King Charles, otherwise known as the King James spaniel, by a former Duke of Norfolk, who had a large number of them at Worksop. It has been asserted that the same description of dog was a favourite in the time of Henry VIII., that it was much esteemed by Elizabeth, and that the small 'dogg' which was found under the clothes of Mary Queen of Scots after her execution was of this breed. As before stated, it is almost impossible to give positive information as to the first origin of the Blenheim; and we incline to the opinion that it sprang from a race of Cockers of that colour, for which the first owner of Blenheim was celebrated, and that the small race known by that name derived their origin from in-and-in breeding, and jealousy to preserve the breed.

"Good specimens were the great exception; and at the period alluded to—about the year 1841—perhaps but two or three *good* specimens existed in the neighbourhood of Blenheim; and of these we can call to mind but one of surpassing excellence, a bitch named Rose, belonging to Mr. A. R. Reingle, of Oxford. This bitch would at the present time bear comparison with anything to be purchased in London, and she quite came up to the description we shall give of a true 'Blenheim.' This charming spaniel did not weigh more than 4½lb. or 5lb. Her head (exquisitely modelled and full of character and intelligence) was in exact proportion to her size. Her coat was soft, silky, shining, luxuriant, and of transparent whiteness, except where it was stained in patches with the genuine rich 'Blenheim orange,' whilst her feet and legs were almost lost in the exuberant feather of her 'mane,' body, and thighs. At the time Rose was in her glory we were receiving instructions from her owner, and possessed many opportunities of marking her beauty and intelligence—two properties which are not always found together in pet spaniels.

"The Blenheim is at the present

time rare, but, compared with the King Charles, it does not command a large price. Several years ago it was with the greatest difficulty we procured one; although of perfect form and exceedingly diminutive, only 15*l.* was asked for it, whilst a King Charles of equal excellence would have been cheap at double the money.

"The points of the Blenheim do not vary from those of the King Charles. The main difference consists in the colour and markings, and in the texture of the hair, which may be more waved in the Blenheim than in the other breed. He should have the same round skull, the same prominent, large, round eyes, weeping and wet at the corner, and leaving a wet trace down the cheek. He must also have the deep stop, the projecting lower jaw, and the short black nose. He should have large, well-coated ears; but we must not expect to find them so dense or so deep and large as in the King Charles. He must be compact, well coated, and the feather of his legs and thighs must be profuse. His tail should be bushy, 'well-flagged,' and carried low. He should not exceed 5lb. in weight; and if he weighs 8lb. or 9lb. he is of very little value.

"His head should be well marked, a white streak should run down his skull, and his lips and chin should be white, freckled by red. In the centre of this white blaze, or rather in the centre of his forehead, he should have the 'spot' about the size of and as round as a sixpence. His chest must be exceedingly well coated; and to this point of beauty great attention should be directed by any judge, as the 'mane' has always been a great point in Blenheims.

"The markings of the body are not of very great importance, provided there is no preponderance of either colour, and that both are distinct or clear. Freckled legs are not in favour; and although a few spots would not prejudice a judge, the fewer of these spots the better.

"The 'red' should be brilliant, and of a yellow or golden hue, by no means approaching the deep sienna stain of the black-tan spaniel or Gordon setter; and many admirable specimens of breeding are of a positively sandy tone. This colour is not, however, *Blenheim colour*, which ought to be rich, pure, and defined. The well-bred animal is lively in temperament, but is more capricious and snappish than the King Charles; yet occasionally it forms deep and lasting attachments to those with whom it associates."

I give the *points* of the Blenheim thus:—Form of head, 15; eyes and ears, 15; coat, 10; compactness and form, 10; brilliant colour and spots, 20; feather of legs and feet, 10; size and weight, 10; and tail and its position, 10—total, 100.

Sect. 26.—The Italian Greyhound.

All authorities unite in the opinion that this beautiful little dog ought to be an English smooth greyhound in everything but size, which is tantamount to stating that it must be one of the most graceful, or perhaps the most graceful and racing-looking creature on the face of the earth. In Italy it has always been a favourite, and we gather from the pictures of Antoine Watteau, the celebrated French painter, that it was much esteemed by the lords and ladies of his country at the close of the 17th or at the beginning of the 18th century; but they were known, and in the hands of the rich—as graceful and perhaps as small as at the present time—in Milan in the 15th and 16th centuries. Hogarth has represented a pair of dogs, somewhat of the breed, in one of his pictures of "Marriage à la Mode," and his dog occasionally appears in the portraits of our old English families; but it has always been scarce, and it is exceedingly delicate and hard to rear. It is neither more nor less than a small greyhound, for which Italy was celebrated, and which perhaps was originally bred as a distinct breed. It must have become dwarfed from climate or constant "in-breeding," but it has never been in any way deformed by the means adopted to decrease its size.

As the external form of the Italian exactly corresponds with that of the smooth English greyhound, I cannot do better than refer my readers to the description of the animal given at page 212, but quoting from this standard, I will observe that "the head should be wide behind, and larger in circumference if measured over the ears than over the eyebrows. The jaw should be very lean, with a good muscular development of the cheek." The eye of

the Italian variety, however, should not be so large or full as that of the English dog. It has been settled that the ear of the Italian should be exceedingly small, and falling flat, except when the animal is animated. It may then be slightly raised, but never pricked.

The Favourite Colours are blue and fawn, the latter should be of an auburn hue. Various colours, however, are fashionable for a time, and then fancy changes. At one time cream-coloured dogs commanded the highest price, then white with black nose. At one time black muzzles were in vogue, and we believe they are preferred at the present time, and particoloured dogs are not thought much of. When these dogs are self-coloured, they should be free from any white, and this may be predicated of every description of dog or hound. Fawn dogs should have black toe-nails. All of the breed should have very glossy coats and a compact form. The tail should be very fine, and though coated, and not bare or showing the caudal vertebræ, it should be void of all roughness.

The Weight must not exceed 8 or 9lb., and the dog is valuable in proportion as he weighs less than this. Specimens have been bred, which, at maturity, did not reach 5lb., but they were very delicate and shy. Some of the best shaped and most perfect greyhounds of this description have reached from 14 to 18 lb., and at this weight they are certainly more robust than the more valuable dwarfs, occasionally becoming fat and losing the beautiful lines of their kind. The bitches are much less than the dogs.

Some very charming specimens have been shown in London; for example, Mrs. Burke's Silver, Dr. Palmer's Garibaldi, and Mr. Hugh Hanly's Psyche; and some very good ones have appeared at all our metropolitan exhibitions; but at the present moment it would be exceedingly difficult to obtain a really first-class specimen, and I have no hesitation in saying it is the rarest dog of the day.

It has been crossed in Staffordshire with the small bull-terrier with advantage, and the produce displayed no delicacy and lost none of its courage. I have seen many of these in "the black country." They were slate-coloured or blue-tanned, and very like the blue terrier known in London as the "blue Peter," which I suspect is bred in a similar manner.

Although the pure Italian greyhound is generally delicate and nervous, it now and then displays wonderful affection and fidelity, and a celebrated bitch of the breed, named Fly, the property of the same gentleman who possessed the Blenheim Rose, once jumped from a third-story window into the street to follow her master, and alighted without injury. This dog was used as a model by more than one sculptor, and we believe that she was the original of the celebrated and artistic model in parian published by the artist-potter of the day.

The *points* of this animal are of course identical with those of the smooth English greyhound, but some preference in marks must be given for the fashionable colour at the time when the award is made. They are, therefore, as follows:—Head, 15; neck, 5; legs and feet, 15; shoulders, 10; hind quarters, 15; back, 10; symmetry, 10; tail, 5; colour and coat, 10; size, 5.

Sect. 27.—The Pug Dog.

Between the years 1836-46 the pug dog was the rarest breed in Great Britain; but now it is again in fashion. About the year 1843 one or two specimens were obtained by a member of the Willoughby family, and, under his fostering care, admirable examples were produced. The old and absurd system of cropping off the whole of the ears prevailed, and this cruelty was excused because it occasioned that wrinkling and puckering of the forehead considered essential in a pug dog. The barbarous fashion was continued simply because it had been followed in the days of our grandfathers and great-grandfathers, at any rate up to the year 1804, when the dog was the rage: and very beautiful specimens thus mutilated have been exhibited at our modern dog shows. Within the last few years this unhappy custom has been on the wane, and where expediency cannot be pleaded, owing to the dog's occupation, we trust such torture will be abandoned.

Lord Willoughby d'Eresby, Mr. Morrison of Walham Green, the late Mr. H. Gilbert, Mr. John Anderson, Mr. Jardine, Mr. Hinks (the owner of Madman, the celebrated bull-terrier), and Mr. Henry

Brown, of Gilling Lodge, Haverstock Hill, one of the most reliable breeders of valuable dogs, and certainly one of the best judges in England of toy dogs—all these and many others have bred and exhibited beautiful specimens of the old English pug dog; and we may gather from the favour the dog has met in high quarters that the breed is in no danger of extinction.

THE COLOUR of the true English pug should be of a fawn or putty-colour, devoid of any smut approaching *blackness*. Clearness and purity of colour are essential, so as to render the various markings as clear and sharp in outline as possible.

THE HEAD should be round, and the forehead high and monkey-like; nose short, teeth level, jaw square. The eye should be full and black; the ears small, silky, black, and close to the head. A black mole should be clearly marked on each cheek, with three hairs in each. The mask should be black and positively marked with well developed wrinkles in the skin; the neck should be strong and thick, devoid of all loose or puckered skin.

THE CHEST should be broad, the Back and Loins wide and strong, and a black line or "trace" should run down the back to the end of the tail. The TAIL should be tightly curled over the side or hip, having a second curl, and the point coming out. The RIBS should be round—this is a great point, as a ragged or narrow dog of this description is considered deformed.

The dog should stand on short legs, as straight and well made as a fox-hound, but with long "hare feet," the toes well split up.

It will be seen that compact form, pure colour, and distinct marking form the principal points in these dogs; but perhaps hardly any toy dog requires a more experienced eye. As all "toys" are beautiful by comparison, no one can form a correct estimate of a dog's relative value unless he is pretty well informed upon the subject, and the rivalry of breeders leads to one excellent example giving place to another. A narrow or pointed nose is a very great disfigurement; so is a woolly or dead coat. The coat should be sleek and shining, short, and soft to the touch. Round feet are also bad, so are white toes, or indeed, white anywhere. If the black of the mask melts gradually into a grey, and is softened until it mingles with the fawn, the dog loses much of its value.

The *points* of a pug are: head, 10; ears, 10; pure colour, 15; distinct mask, 10; black trace, 10; cheek moles, 5; quality of coat, 10; curl of tail, 10; compactness, 10; hare feet, 10—total, 100.

SECT. 28.—THE MALTESE DOG.

This dog resembles in general appearance a diminutive Skye terrier, differing chiefly in being of much less size, shorter in the back, and far more silky in coat, which should be of the purest white. Most of the breed are very animated in expression, and in every way are well adapted to be made drawing-room pets. Mr. Mandeville, of London, has of late years carried all before him at the various shows, and indeed has had little opposition, so completely have the claims of his strain been recognised.

THE HEAD closely resembles that of the Skye terrier, but the hair covering the face is more flossy. The general COAT is as long also, but more transparent and soft, sometimes running into a fine species of wool; tail carried over the back, but very short, with a brush of silky hair. COLOUR white, with an occasional patch of fawn. WEIGHT not more than 6lb. or 7lb., and as much less as possible.

The *points* are: colour, 30; coat, 30; nose and eyes, 20; tail and carriage, 15; symmetry, 5.

SECT. 29.—TOY TERRIERS, &c.

Each variety of the terrier when bred less than 5, or even 7lb., is considered to belong to the toys. If black and tan, the colours should be very distinct and rich, without a speck of white, and on the tan each toe should be pencilled with a fine streak of black reaching to the knee. This is a point greatly insisted on by fanciers. In other respects the description of this dog at page 806 will apply. Blue and fawn smooth terriers are also prized highly, but they are not so handsome in my opinion as the black and tan. Smooth white terriers should be without a speck of colour; but they show too much of the pink colour of the skin for my taste. These dogs have generally their ears clipped with tails left perfect, but some people prefer both

left as nature provides them. The rough blue fawn, silky coat terrier, makes a very pretty toy dog, and so does the dwarf bull-terrier—both resembling the larger breeds in all points. The Italian greyhound, crossed with the terrier or spaniel, is often passed off as the pure toy terrier, especially the latter, which may be known by the full eye peculiar to the spaniel breed.

THE LION DOG and SMALL POODLE are both sometimes made toy dogs, as well as the Chinese and Japanese spaniel, but they are not bred in this country to any extent.

CHAPTER III.

DOG SHOWS, AND JUDGING BY POINTS.

OF late years dog shows have multiplied so much that they have taken hold of the public mind almost as completely as any of the old sporting institutions. Much dissatisfaction, however, has from the first been felt by exhibitors in consequence of not having a standard of merit by which to be guided in breeding and judging. In many cases the choice of points is wholly arbitrary, as in the toy dogs; for no one can contend that on any other principle a small eye shall be a merit in one breed (toy terrier) and a defect in another (King Charles spaniel). For this reason a series of articles was published in the *Field*, by experienced judges and breeders, describing each breed, and allotting to each a scale of points; and subsequently the National Dog Club, taking this series as a groundwork, drew up the scale which is closely, though not always exactly, followed in the preceding descriptions. In the interval, Mr. Rowe (a noted breeder of mastiffs) suggested that in addition to these positive points, an equal number of negative ones should be added, which, if present, should be deducted from the positive points, in the following manner. I am assuming that the six best specimens in the open large pointer class have been drawn by the judges for further examination. Every point in each is then set down in the table (whether good or bad) opposite the number in the catalogue corresponding with the dog.

Of course, as absolute perfection is estimated in each column, imperfection in the same points cannot be set down in higher numbers.

The plan is, I think, an admirable one, and ought to be universally adopted; but as it gives more trouble to the judges to carry out carefully, it is either directly or indirectly opposed by many of these officials. At the show of the National Dog Club in London, the plan was partially carried out, and worked extremely well as far as it went, but there was a deficiency of attendants, which prevented its general adoption, and one or two of the judges only carried it out in name, *as they first allotted the prizes in the usual way, and then noted the points of their selections at the highest scale;* in fact, making the three prize winners in one class all absolutely perfect. Now, if such a state of things had actually occurred, they were bound to have put them equal; but, of course, it was not so, and the full points were only given because they did not like to give offence, forgetting that in the allotment of prizes they were equally obliged to incur the displeasure of the less successful exhibitor, without the defence which a careful apportionment of points would give. Never was a more lame and impotent conclusion arrived at, and the more especially as the chief offender was a member of the Council of the National Dog Club, and had himself examined and approved of the scale of points under which he had agreed to act!

OPEN CLASS, LARGE POINTER DOGS.

Special Valuation of Individual Points.

No. of Dog in Catalogue.	Head and Nose 20	Ears and Neck. 10	Legs and Feet. 12	Elbows, Hocks, and Stifles. 8	Shoulders, and Chest 15	Back and Hind Quarters 15	Symmetry, Colour and Coat. 10	Quality and Stern. 10		Insert here the Total of Positive and Negative Points.	Net Total.	General Remarks
154	18	9	12	7	...	15	10	10	Positive Total.	81	77	Appeared a little tired.
	...	...	...	...	4	...	...	...	Negative Total	4		
157	16	10	9	6	...	14	9	8	Positive Total	72	58	
	...	...	...	...	14	...	...	...	Negative Total.	14		
169	14	10	6	5	15	11	8	6	Positive Total	75	7	
	...	...	...	...	...	...	...	...	Negative Total.	...		
162	20	10	...	8	15	12	10	10	Positive Total	85	73	
	...	...	12	...	...	...	...	...	Negative Total	12		
163	18	6	10	8	16	10	10	10	Positive Total	82	82	Somewhat shy.
	...	...	...	...	..	...	...	...	Negative Total.	...		
166	12	5	10	6	15	...	10	10	Positive Total.	68	58	
	...	...	...	...	...	10	...	...	Negative Total.	10		

PART IV.

NATURAL HISTORY OF THE PRINCIPAL ANIMALS USED BY MAN IN RURAL SPORTS.

BOOK III.—GENERAL HABITS AND VARIETIES OF THE HORSE.

CHAPTER I.

GENERAL HABITS OF THE HORSE.

THE HORSE (*Equus caballus*) comes next to the dog in rural sports, being, in fact, almost on a par with him, considering that he is used not only in the true field sports, but in racing, riding, and driving. He also belongs to the division *Vertebrata*, and the class *Mammalia;* but the order *Ungulata*, in which he his included, is separated by a long interval from the dog, being the last of the *Mammalia*, while the *Feræ* come next to the *Primates*, of which man is the head and chief. Among the *Ungulata*, the Horse forms the second family, together with the Ass, the Dzigguetai, the Zebra, and Quagga.

THE EARLY HISTORY AND ORIGIN OF THE HORSE is, like that of the dog, wrapped in obscurity and fable, and we really know little or nothing of it, except that we have reason to believe that he first came from Asia, like man, and, according to the Mosaic account, all other animals now existing; and that he was used in Egypt more than 3000 years before Christ. But with the *history* of the horse I shall not encumber this book, which, as I have more than once remarked, might be enlarged to an enormous extent if this department were entered into at length. Suffice it, then, to discuss the present condition of the horse, and its more recent origin, as now existing in Great Britain, in addition to his general habits.

THE HABITS OF THE HORSE, in all countries, and of all varieties, are pretty much alike. Wherever he is at large, he is bold, but wary, and easily taking fate of the approach of man to give him as wide a berth as he possibly can, or rather to show him a clean pair of heels. Wild horses exist to the present day in the interior of Asia and in South America. But both the horses of the Tartars and those of La Plata are descended from domesticated animals, and can scarcely be called wild in the ordinary acceptation of the term. Indeed, the Californian horses, which are still more recently bred in a wild state from Spanish horses, are quite as wild as those described by Sir F. B. Head. From their constant state of liberty, and their roving habits, in order to obtain food and water, they are inured to fatigue, and can bear an enormous amount of long-continued fast work, without failing under it, and without that training which the domesticated animal must have. The walk and the gallop are his natural paces, and all others are acquired; but nothing can exceed the fiery animation and the elegance of movement of the free horse; and in these two paces art has done nothing to improve his form, except, perhaps, in slightly increasing the speed of the latter. In all countries, and in every age, the horse feeds upon grain or grass, though it is said that in Arabia he is occasionally supported upon camel's milk, when food such as he usually lives upon is not to be had.

CHAPTER II.

VARIETIES OF THE HORSE.

THE ARABIAN is still one of the most distinct varieties of this noble animal, and also one of the most prized, being eagerly sought for by Turks and Christians in Asia, Southern Russia, India, and even in Australia. In his native deserts he is still sometimes to be seen in a half-wild state, though most probably owned by some of the "dwellers in tents" peculiar to that region. But it is the more domestic breed with

which we have chiefly to do, and which is carefully preserved in purity by the chiefs of the various tribes, though it is supposed not so free from stain now as was formerly the case. The head of the Arab is the most beautiful model in nature, giving the idea of courage tempered with docility and submission to man better than any other animal, and even more so than the dog. The accompanying sketch by Mr. Wells, of the Arab horse, shows this point in full perfection, as well as the light and elegant neck, the high quarter, and the light barrel. It is seldom, perhaps, that so beautiful a frame exists; but examples are not wanting of such a union of elegance with perfectly good and useful points. The length and muscularity of the fore-arm are also remarkable, and the setting on of the tail is peculiarly high—points which have generally been transmitted to our thoroughbred horses descended from Arabian blood. Many imported horses of this breed are exceedingly wicked and full of tricks; but in India, as a rule, he is quite the reverse, and to the British sportsman there he is very valuable, because he faces the elephant and the tiger better than any other breed. In height he is generally a little under 15 hands; and in colour either bay, black, or grey. It is said that there are three distinct breeds of Arabians even now—the Attechi, a very superior breed; the Kadischi, mixed with these, and of little value; and the Kochlani, highly prized, and very difficult to procure. If this is true, it may account for the very different results produced by breeding from modern Arabs and those introduced in the eighteenth century. Under the chapter on Breeding for the Turf (page 368) the various Arabians are enumerated from which our modern horses are derived.

The Barb is an African horse, of smaller size but coarser make than the Arabian, and evidently fed upon more nutritious food. As his name implies, his native land is Barbary; but there is always great doubt about the particular breed to which imported horses belong, because they are carried considerable distances from their native plains, and are also even then much mixed in blood. It has frequently been said that the Barb is the progenitor of one root of our best English stock, and that the Godolphin Arabian, as he was called, belonged to this blood; but the disputed point cannot possibly be settled, and there seems only one argument in favour of the supposition, founded upon his enormously high crest; while his superior size, being 15 hands high, argues just as strongly in favour of Arab descent. But the Spanish horse is no doubt descended from the Barb, this breed having been carried into Spain by the Moors when they overran the country; and, as the appearance of the Spanish horse is totally opposed to that of the descendants of Godolphin, it is a still stronger proof of his Arabian ancestry, or, at all events, an argument against his claim to Barbary as a native clime; and as Lord Godolphin was the owner of a Barb as well as of the celebrated Arabian, it is possible that the dispute may have arisen from a confusion of the two animals.

The Dongola Horse is another African variety, of a much larger size than either the Arab or the Barb, but more leggy. I am not aware that any of this breed have reached this country.

The Persian is a small-sized horse, and quite as elegant as the Arabian, but not nearly so enduring.

The Turkooman, again, is a larger breed, but without the elegance of form of the Arab and Persian. These horses are light in the barrel, and leggy, with coarse heads and ewe-necks; yet they are endowed with very stout and lasting qualities, and they are said to travel very long distances without distress. This is only another instance of the oft-quoted adage, "that the horse can go in all forms."

The Cossack Horses are reared at liberty, and in large herds, and they were long said to be, in consequence of this fact, of unrivalled speed and stoutness; but in the celebrated race run in Russia in 1825, they were easily beaten at all points by an English horse of second-rate powers, carrying also more weight. They are small and rough-looking, yet spirited and capable of doing all that can be expected from a *pony*.

The Turkish Horse is supposed to be nearly pure Arab, with a cross of the Persian and Turkooman. He is a very fine, high-spirited, and elegant

horse; but, although the English race-horse includes in his parentage several Turkish importations, as the Byerly, Helmsley, and Belgrade Turks (see page 369), it is doubtful whether these were at all similar to the present breeds met with at Constantinople. Indeed, as Turkey in Europe and Turkey in Asia are together spread over a large surface of the Eastern hemisphere, the mere name of Turkish horse does not describe very closely his birth and parentage.

THE EAST-INDIAN AND AUSTRALIAN HORSES are of various mixed breeds, some being Arabs, some Persians, and others Turks and Barbs; while others again are of English blood, but in India these degenerate rapidly, and though serviceable in crossing with the Arabian or the Barb, yet they cannot long be maintained in their original purity without injury. Of late years, however, many thorough-bred horses have been imported into Australia, and racing stock is bred and pedigrees are as carefully recorded as in England. The same may be said of New Zealand, which also has its own Stud Book.

THE BELGIAN AND DUTCH HORSES are now imported into this country in considerable numbers, and for slow work are very serviceable. They are, however, most of them too heavy and lumbering for anything but machiners, and even in that department they require care not to over-drive them. Most of the horses for our "black work" are from this sort, and many also of the black cavalry horses.

THE NORMAN HORSE, again, is a much more hardy and compact animal, but still slow as compared with our breeds. He is, however, gifted with an excellent constitution, and with legs and feet which will stand rattling to any extent. These horses are generally low and short-legged, as compared with the Belgians.

THE SPANISH HORSE is much crossed with the Barb, and has the good head and neck of that breed, but coupled with a weak and dropping hind quarter and a very light middle-piece. The shoulders and legs are, however, good; and he is more useful than his look would warrant an Englishman in believing possible, when comparing him with English horses.

THE AMERICAN AND CANADIAN breeds vary a great deal, and are made up of the original Spanish stock crossed with English, Arabian, and Barb importations. Climate, however, has done much for them; and they have all the wiriness of frame and elasticity of muscle which their masters possess. As trotters they are unrivalled, and in endurance stand very high; but they are not remarkable for beauty, though not showing any peculiarly unsightly points. Some of our best horses have been exported to America, especially to Virginia, where Tranby, Priam, and many others have done good service. The importers to that country have always been careful to select *sound* as well as stout blood, and have not hesitated to invest large sums in order to procure it.

THE ENGLISH THOROUGH-BRED I have already described at great length in the chapters on Racing, and the best mode of breeding horses for its various purposes, including also a description of the various breeds of hunters; and, in the chapter on Riding, I have alluded to the hacks which are made use of in this country, and the breeds from which they are derived. To these the reader is referred for full particulars.

THE VARIOUS BREEDS OF CART-HORSES are exceedingly numerous, but they belong rather to business than sport. Most of our larger and heavier breeds of these animals are crossed with the Flemish horses, and are thereby rendered heavier and more capable of moving heavy weights, which their bulk and readiness to try a "dead pull" render them well adapted for. These enormous animals are often of more than 17½ hands in height. The Clydesdale, the Cleveland, the Midland Black horse, and the Suffolk Punch are the four most highly-prized varieties of this breed, and have now almost completely shouldered out the old English black cart-horse, with his coarse head and mean ungainly appearance. It has been tried, again and again, to cross these four breeds with the Eastern horse, but though in the first cross it has sometimes succeeded from the superior purity of the thorough-bred horse, yet in future crosses the cart blood would show itself; and there has always been a want of endurance, and a tendency to throw out bony matter about the legs in the shape of spavins, ring-bones, and splents.

THE COACH HORSE will be found de-

scribed under the head of Driving, in all his varieties and forms.

The Cavalry Horse may be considered under three several heads—first, the charger, or officer's horse; secondly, the heavy trooper; and thirdly, the light trooper. The *charger* is almost always thorough-bred, or very nearly so, and is a horse bred for racing, but too slow for that purpose, yet with a fine form and good action, which are required for the *manége*. He must have good shoulders, so as to be able to use his fore-legs; and his hind quarters should be so formed as to give complete command of the whole weight which he carries; in other words, he should be well upon his haunches. Most chargers are at least 16 hands high, and some still higher. The *heavy troop horse* is a discarded hunter, that is, a horse bred for that purpose, but considered too heavy to gallop the pace which is wanted. He is therefore sold at troop-horse price, which in time of peace used to be 24*l.* but is now raised about 50 per cent. The household troops are mounted on black horses, some of which are bred expressly for the regiments by Yorkshire breeders, and others imported from Belgium. The *light troop horses* are obtained from all sources, and many of them now, as might be expected from the price, are very wooden and inferior animals. The sum devoted to the purpose will not procure a good serviceable animal, coupled with tolerably good looks; and as this latter quality is sought for by colonels of regiments, utility is too often sacrificed to it. Very few of these horses are up to more than 14st., and yet they have to carry 18st., so that it is no wonder that in actual service they break down.

The Galloway is a breed which is much encouraged by the Welsh farmers, and in other districts where the grass is of a poor quality, and will not suit larger and less hardy horses. It is serviceable for all general purposes, but seldom very fast on the gallop. These animals are said to be descended from Norman blood, a stallion of that breed having been much used among them in Wales some years ago. They are hardy and safe, but somewhat obstinate and unruly. The north-country galloways are scarcely so good in their shoulders, but they have more speed in the gallop, and make better covert-hacks in consequence. The smallest specimens of this breed make our ordinary ponies, those not exceeding 13 hands being so called, while the galloway runs from that height to 15 or 14½ hands.

The Shetland Pony is the least of the species in this country, and often under 11 hands. These ponies are very quick and active, and will walk, canter and gallop, with good action, but seldom trot well.

SHETLAND PONY.

PART IV.

NATURAL HISTORY OF THE PRINCIPAL ANIMALS USED BY MAN IN RURAL SPORTS.

BOOK IV.—GENERAL MANAGEMENT OF THE DOG AND HORSE.

CHAPTER I.

MANAGEMENT OF THE DOG.

Sect. 1.—General Remarks.

The Management of the greyhound and foxhound have been minutely described in all points relating to their kennel-management, feeding, exercising, and breeding, and it only remains to say a few words on the treatment necessary for pointers, setters, spaniels, and retrievers, including the Newfoundland. All these dogs are, in the usual way, chained up to a wooden kennel, with a length of chain which allows of no exercise; and the only advantage which they have over neglected hounds is, that they are generally kept clean for the sake of appearances. But too often they are fed irregularly, and on improper food, and almost invariably proper exercise is denied them. For these dogs Indian meal is by far the cheapest and the best kind of food, and with greaves it will keep them in good health, if they are only sufficiently exercised every day. But in many cases horse-flesh, being at times very cheap, is given raw, and often unmixed with vegetable food; and the master is then surprised if an eruption appears over the bodies of his dogs, when the chief reason for wonder is that any ever escape, with such a diet to stimulate and inflame their blood, and nothing to carry it off. This improper feeding and neglect of exercise are fertile sources of madness, and should be avoided by all who value their own safety; but besides this motive, which some may perhaps disregard, there is another, which every sportsman will carefully consider, namely, that dogs so mismanaged are almost always deficient in nose. It is very often said that there is no scent for pointers or setters early in the season, but quite as frequently they have not come to their noses, and it is only after a fortnight's work that they carry off the stimulating results of bad feeding. No sporting dog ought ever to be neglected, for he will seldom entirely regain his health, and without a full share of that commodity he will not be capable of making out a scent. Servants, therefore, ought to be well watched during the spring and summer, that the dogs may be attended to by them; and if they do their duty there will be very little reason to complain of birds flushed, or of sore feet, or knocking up. Sporting dogs (not including greyhounds) will seldom exercise themselves at a fast pace unless they are allowed to hunt; and as this is impossible in the summer, they should be taken out with a man on horseback once or twice a week on the road. Very little flesh should be given them, which is only wanted when they have severe work, and can seldom then be procured. Greaves, with meal, and occasionally potatoes, form the best food; carrots, cabbages, or turnips should be given once or twice a week; and a dose or two of castor-oil, salts, or jalap will do good two or three times in the summer, or an aloetic ball.

Sect. 2.—The Breeding Bitch.

The directions for the management of the brood-bitch, given under the article Coursing (page 232), will equally apply to other sporting dogs; but few people will take the full amount of trouble which is there advised, and it will suffice if the whelps are sent into the country to be reared at the butcher's, the tanner's, or the small wayside public-house. When milk or buttermilk can be obtained, it is a good article to rear all whelps upon; but it is seldom afforded to ordinary dogs. The accidents likely to occur in whelping are alluded to in the part on the diseases of the dog.

Sect. 3.—Dressing.

Dressing, with a mixture of sulphur and train-oil, is very generally adopted every year with sporting dogs, and if they are mismanaged in their feeding, it is absolutely necessary; if, however, they are clean in their skins, it is not required. Soft soap and soda kills their fleas, as ordered for greyhounds (page 249), and white precipitate, ticks; but the latter should only be used with a muzzle on to guard against its being taken into the stomach by the tongue. Fleas may also be destroyed by Calvert's carbolic acid dog-wash, diluted according to the instructions sold upon the bottles. With these variations sporting dogs may all be managed as directed for the hound and greyhound, making allowance for the difference of size.

Sect. 4.—Kennels.

Sporting dogs—as, for example, pointers or setters—are often kept in such numbers as to require a kennel or kennels. When such is the case, an open yard paved with glazed tiles or blue bricks must be added, but it is better not covered in. The lodging room must be in proportion to the number of dogs, but it is better not to have more than three or four together. The whole of this part should be boarded, and raised 18 inches or 2 feet, with a lining of board 1 foot high to keep the backs of the dogs from the wall. An opening 3 feet high and 2 feet wide is left for the dogs to get in and out, and this should be provided with a wooden door hinged at the top and kept partly open by ∧-shaped sides, so as to allow the dog to jump up and down freely, and yet keeping the wind and rain from entering. This is a wonderful improvement on kennel doors, which I introduced some years ago, and which ought to be generally adopted, as it is the only plan by which kennel beds can be kept clean, and at the same time airy, without admitting the rain and wind. When the bed is to be removed, the door with its sides is lifted up, and the attendant easily enters.

Sect. 5.—Management of Pet Dogs.

The Food of pet dogs is almost always too heating in its nature, considering that they are generally deprived of a proper amount of exercise. Sometimes I am induced for the sake of brevity to recommend correspondents to diet their dogs as they do their children. But unfortunately the latter are also often crammed with all sorts of improper articles of food; and I should perhaps be less liable to mislead my readers if I advised them to give their dogs the same kind of food which they would think right for the children of their acquaintances. Theory and practice are often widely separated, and many a mother is so weak as to allow her own child to tease her into giving creams and pastry, which she would, "on principle," refuse to another not holding the same power over her maternal feelings. We all know how well bachelors' wives and old maids' children are managed, and therefore I would in a few words wind up the general principles of managing pet dogs by suggesting that, if the plans so often recommended by the wise virgins of this world for feeding their nephews and nieces were carried out in favour of pet dogs, a great improvement would be effected in their health and appearance.

To begin at the beginning, however, I will suppose that a puppy six weeks old, and of a breed not exceeding 15lb. weight, is presented to one of my readers. What is to be done? First of all, if the weather is not decidedly warm, let it be provided with a warm basket lined with some woollen material, which must be kept scrupulously clean. The little animal must on no account be permitted to have the opportunity of lying on a stone floor, which is a fertile source of disease; bare wood, however, is better than carpet, and oilcloth superior to either on the score of cleanliness. In the winter season the apartment should have a fire, but it is not desirable that the puppy should lie basking close to it, though this is far better than the other extreme. Even in the severest cold a gleam of sunshine does young creatures good, and the puppy should, if possible, be allowed to obtain it through a window in the winter, or without that protection in the summer. It will take exercise enough in playing with a ball of worsted or other materials indoors until it is ten weeks old; but after that time a daily run in the garden or paddock will be of great service, extending to an hour or an hour and

a half, but not so as to overtax its limbs. After this age, two or three hours a day, divided into periods of not more than an hour each, will be of service; but it is very seldom that young pet dogs can reckon upon this amount of exercise, and, indeed, it is not by any means necessary to their healthy growth.

Until after the tenth week, cow's milk is almost essential to the health of the puppy. It should be boiled and thickened at first with fine wheat flour, and after the eighth week with a mixture of coarse wheat flour and oatmeal. The flour should be gradually increased in quantity, at first making the milk of the thickness of cream, and towards the last adding meal in quantity sufficient to make a spoon stand up in it. If the bowels are relaxed the oatmeal should be diminished, or if confined increased. This food, varied with broth made from the scraps of the table, and thickened in the same way, will suffice up to the tenth or twelfth week, after which a little meat, with bread, potatoes, and some green vegetables, may be mixed together and gradually introduced as the regular and staple food. The quantity per day will of course vary according to the size of the puppy; but, as an approximation to the proper weight required, it may be laid down that for each pound the puppy weighs an ounce of moderately solid food will be sufficient. From the time of weaning up to the tenth week it should he fed four times a day; then up to four months, three times; and afterwards twice until full grown, when a single feed will, in our opinion, conduce to its health, though many prefer going on with the morning and evening supply.

When the puppy is full grown, meat, bread, and vegetables (either potatoes, carrots, cabbage, cauliflower, or parsnips), in equal proportions, will form the proper diet, care being taken to avoid bread made with much alum in it. Dog biscuits, if sound, answer well for pet dogs; but the quantity required is so small that in most houses the scraps of the bread-basket are quite sufficient. Bones should be supplied daily, for without them not only are the teeth liable to become covered with tartar, but the digestion is impaired for want of a sufficient secretion of saliva.

If the above quality and quantity of food and exercise are given, in combination with the protection from cold recommended, the pet puppy will seldom require any medical treatment. Sometimes, in spite of the most careful management, it will be attacked by distemper contracted from some passing dog infected with it; but with this exception, which will not often occur, it may be anticipated that the properly treated pet dog will pass through life without submitting to the attacks of this disease, which is dire in its effects upon this division of the canine race. If care is taken to add oatmeal and green vegetables to the food in quantity sufficient to keep the bowels from being confined, no aperient will ever be required; but sometimes this precaution is neglected, and then recourse must be had either to castor-oil or the compound rhubarb pill—the dose being one drop of the former or half a grain of the latter to each pound the puppy weighs. If the oil is stirred up with some milk the puppy will take it readily enough, and no drenching is required; but care should be taken that the quality is good, and that the oil is not the rank stuff sometimes used in kennels of sporting dogs. The compound rhubarb pill may be given by opening the mouth with the left hand, and then dropping in the pill. It must be boldly pushed well down the throat as far as the finger will reach, no danger being risked in effecting this simple process. If the liver is not acting (which may be known by the absence of the natural gingerbread colour of the evacuations), from half a grain to a grain of blue pill may be added to either dose, and repeated if necessary every day or every other day till the desired effect is produced.

Very young puppies should not be washed, even in the summer season, as they are very liable to chill. After they are three months old, however, a bath of warm water, with or without soap, will do good rather than harm, provided that care be taken to dry them well afterwards. For white dogs, white soap is required to give full effect to this operation; and it may be either curd or white soft soap, whichever is preferred, the latter being most effective in cleaning the coat. Long-haired dogs, such as spaniels, the Maltese and Skye terriers, require combing and brushing until they are dry, which should be done

in the winter before a fire; and in the latter breeds the coat should be parted down the back with the comb in the most regular manner. If the hair has become matted, a long soaking will be necessary, the comb being used while the part of the dog submitted to its teeth is kept under water, which will greatly facilitate the unrolling of the tangled fibres. After the coat is dry, where great brilliancy is demanded, a very slight dressing of hair-oil may be allowed occasionally; but the brush is the best polisher, and when "elbow grease" is not spared, a better effect will be produced than by bear's grease at half-a-crown a pot.

With the exception of fleas, pet dogs ought never to be infested with any vermin. Sometimes, however, they catch from others either lice or the ticks which infest the canine race. The appearance of the first two parasites is well known to every one; but the tick is not among the things commonly presented to the eye, and we may therefore mention that it may be known by its spider-like shape and by its close adhesion to the skin by means of its legs, with which it digs into the surface. In size it varies from that of the head of a small pin to the magnitude of a small grain of wheat, but not being so long in proportion to its width. The colour changes with that of the dog and with the quantity of blood imbibed, which always gives a greater or less tint of bluish red; but in very young ticks the colour is a pearly grey. In destroying fleas the safest remedy is the insect-destroying powder sold by Butler and M'Culloch of Covent Garden, and by Keating of St. Paul's churchyard, which may be well rubbed in without fear of consequences. Other remedies are described in page 249. Lice and ticks require a powerful drug to destroy them, and this should be used with more care, as, being a mercurial preparation, it is liable to be absorbed if the skin is wetted, and then produces serious mischief, accompanied by salivation; or, if the dog is allowed to lick himself, this effect is still more likely to follow. The dog should therefore be kept carefully from all wet for at least twelve hours, and during the application of the remedy it should either be carefully watched and prevented by the hand from licking itself, or it should be muzzled. The remedy is white precipitate, in powder, well rubbed into the roots of the hair over the whole body, and left on for six hours, after which it should be brushed out. At the expiration of the week the application should be repeated, and possibly it may be required a third time; but this is seldom needed.

CHAPTER II.

GENERAL MANAGEMENT OF THE HORSE.

Sect. 1.—Stabling and Stable Appendages.

The Stables for General Work differ little from those for hunters, which have been minutely described at page 528, where a ground plan is given, calculated for 12 or 18 horses. Such a stable will equally answer for any private establishment where a similar accommodation is allowed; and for smaller numbers, one or two three-stalled stables on the same plan will be found to be more healthy than a single one of six stalls. For ordinary work these are better suited than loose boxes, inasmuch as they are equally airy, and on the other hand, the horses thrive better from the companionship afforded; but they are more roomy than most gentlemen will be inclined to afford their horses, especially in towns. In every case full light should be given, except in those instances where a great deal of work is to be got out of the horses, as in coach or cab stables, &c., where the necessity for repose at all hours, when not in harness, calls for darkness, or at all events a very glimmering light. But in gentlemen's stables, few horses are thus worked, and they are much oftener kept within doors too long than exposed too much to the hard-

ships which hired horses too often endure. Light, therefore, and ventilation, may be considered as essential to all private stables, except those for racehorses, already excluded from our consideration by a special description. The best plan for the admission of light and for giving a satisfactory ventilation is described at page 528; but in all cases it is not possible to allow of the plan there proposed, and then a sufficient window or windows, may be contrived at the side or back of the stalls, but always large enough to light the stable effectually. Even when windows are not to be managed at the heads of the horses, air-shafts may always be arranged, passing up from over their heads, which will keep up a free ventilation for their respiration. In all cases, even of the lowest stables, a square tube of zinc or iron may be carried up through the hayloft, and pass out through the roof, and by its aid the air may be kept sweet and wholesome. Side draughts are to be avoided, but fresh air must be admitted; and this is generally to be effected by means of openings in the windows or door, similar in principle to those shown in the engraving of the windows of greyhound kennels at page 218. The drains should be always trapped, and conducted into the manure pit, just as shown in page 528.

Less Expensive Stables may be constructed with open stalls, but they should have them, at the very least, 6 feet wide, and 14 feet from back to front. If, therefore, a stable on this calculation is made to hold three or four horses, and is 10 feet high, it will give 840 cubic feet as the allowance of air for each horse, a quantity which is not quite half what I have calculated in discussing the nature of the respiratory process, as required for the full-sized horse. But, from long experience in my own case, and in that of others, I am satisfied that horses *in regular work* may be kept healthy for years together without a more ample allowance of air; and this is explained by the constant opening and shutting of doors, and by the leakage under them, as well as through other openings, which is always going on. A racehorse or a hunter is shut up after feeding, and is not disturbed for some hours, and during that time he receives no fresh air, except by the crevices in the doors, or the apertures purposely left open. But in the case of the hack or harness-horse there is generally a constant opening and shutting of doors during the day, while fresh horses are being taken out, or tired ones brought in; and also for the various stable operations, which are not all concluded with quite the same degree of regularity as in the former case. But, at all events, let the reason be what it may, such is the result of general experience, and by common consent the minimum proportions for the stall of the full-sized horse are fixed as given above.

A Ceiling should always be made especially when a hayloft is over; and in no case where it can be avoided should there be an opening through it for the high rack, which used to be so universally employed. This opening is constantly the means of throwing dust down upon the horse's head, irritating thereby the nose, eyes, and lungs; and it also admits the foul results of respiration to the hay in the loft, by which this is materially injured. The floor should be paved with stones, cut deeply in furrows, to prevent slipping; or with *hard* bricks or pebbles.

The Rack and Manger should be of the modern plan, which provides three separate receptacles, side by side, for the food of the horse. They are generally now made of cast-iron, enamelled, and with the front edge so wide that the horse cannot grasp it with his teeth, in order to prevent crib-biting or wind-sucking. The hay is placed in a compartment on one side, which is generally made open at the top, and barred at the front and bottom, to allow of the dust falling through. By a recent ingenious invention the hay is always brought to the top of the rack in the following manner:—first, a top, barred so as to admit the horse's muzzle, is made to open like an ordinary lid; secondly, a false bottom is made to travel up to the top by means of a weight and pulley; thirdly, the hay is introduced through the open lid by pushing down the false bottom, and when the rack is filled *loosely* the lid is put down and fastened; fourthly, the horse draws the hay out as he wants it through the upper bars, and as fast as it is eaten the weight lifts the remainder up against the bars. This is said to economize the provender; but, as I have never seen it used, I cannot speak from

experience. In the ordinary low rack I have never found that more than one-twentieth part is wasted, and scarcely that amount with most horses. There is no doubt a saving of fully one-sixth in the low rack over the high one, where the horse pulled down much more than he ate; but I cannot quite understand how the above plan can save much more than is effected by the open low rack. The manger for the corn is generally of the old construction, but a plan has been lately introduced by which the corn is supplied from a magazine at the back of the manger through a small opening, and is only submitted to the horse's breath when wanted. This also I have never seen tried; but for delicate feeders I should fancy it likely to be very suitable, as many of these animals are very apt to leave a little of their corn on all occasions, apparently from its being soiled by their breath, or from wetting it with their lips in picking it up. The third manger, for water or gruel, is now almost always added; and, if not constantly used for water, is always handy for giving bran-mashes or gruel, which are very apt to make the corn-manger smell sour for some time after, although the enamelled iron almost entirely provides against this.

The Rings for the collar-reins should be two, one on each side, so that a horse is prevented from turning round in his stall, and thus in great measure from rubbing his tail. To understand how this is effected, it must be remembered that if a rein is attached to the right-hand corner, although it allows the horse to stand back five feet from the manger, yet it prevents his getting his head to the left more than five feet; and if another is also fixed to the left-hand corner, he is likewise prevented from moving his head more than five feet to the right, so that in both cases he is prevented from getting it so far that he can stand across his stall; whilst in a halter of the same length, merely attached to the middle of the manger by one ring, he could easily hang back, and get his head over the *travis*, or wooden partition, and so cross the stall, and even turn his tail against the manger, as is commonly seen in old-fashioned stables. The Rings should be made to pull out by having an arm slipped into a socket with a spring-catch, so that no force will draw them upwards and towards the horse; but if he has his leg over the collar-rein, a comparatively slight pull *downwards* will liberate the ring, and do away with the danger attending upon that accident. There is a provision against this which almost always answers, consisting in having a distinct tube behind the manger in which the collar-rein freely plays, so that no amount of litter can possibly interfere with its free action; for it is from this cause, in most cases, that the leg becomes entangled, the rein hanging down loosely in front of the manger, and being then caught by the leg of the horse. In some cases, however, the horse catches his hind-leg by reaching forward to scratch his head with the hind-foot; and here the freely running-rein is not a certain preventive, though in the vast majority of cases it will prevent all risk.

A Rack-Chain is also necessary in all stables, so fixed, that when hooked to the horse's head-collar, it will prevent the horse reaching his manger, or lying down. The ring is about 7 feet from the ground, fixed in the middle of the head-wall, and the chain is about 3 feet long, capable of being shortened to 2 feet.

The Travis is the separation between the stalls, which is generally 8 or 9 feet high towards the head, and about 4 feet 5 inches to 5 feet at the foot. A stall-post from the floor to the ceiling should always be fixed, as without it there is some danger of the post giving way in cases of accidents, by which sometimes two horses are severely injured, instead of one perhaps only slightly. These partitions are often made very expensive, in consequence of the upper rail being cut out of the solid oak in a sweep, but if three straight rails are morticed in from the post to the wall, and the elm boards are nailed to them and cut off at the top in the desired sweep, it is only necessary to nail the fillet of elm of half an inch substance along the top, and everything is obtained which the much more expensive compassed top-rail would give. A ring is fixed to each stall-post, at about 8 feet from the ground, to which the head-reins, or chains, are attached, which keep the horses in their places when turned round in them saddled or harnessed, and ready for work. In all private stables two or three *gangway bales* are

made to slip into mortices in the stall-posts, and to run from them to the wall, so as to prevent the horses at night from injuring each other.

Bales are sometimes used instead of travises, especially in military stables and those belonging to public-houses. Here a strong oak rail is suspended between the stall-post and manger-post by a short chain, so arranged that in case of necessity either end may be readily liberated, which is effected by a hook and travelling ring; the latter slips over the hook and attaches it to a slide, but on being raised along its traveller it liberates the hook, and the bale falls to the ground. With bales horses can be stowed much more thickly than with travises, because they give way to them as they turn, or as they get up or lie down; and 4 feet 6 inches, or even somewhat less space, will in this way suffice for each horse; but there is considerable danger from the kicks of the adjacent horses.

The Hay and Straw Chamber may either be on the ground-floor or above the stable; but in every case it is better to have no opening between them, as the contents of neither are improved by contact with those of the other. If in the loft over, the same opening which admits the hay from the waggon allows of its being brought down for daily use; and even in wet weather a few drops of rain upon hay which is at once going to be used is not by any means prejudicial to the horse's health. It may be carried by hand from the ground in front of the loft door, or from the hay chamber, if below, to the horse's rack. In most stables provision is made for a load of hay, which is usually in the country nearly two tons, or, in London, about one and a half; and the chamber for storing this quantity should be of the size of a roomy loose box. When hay is supplied in small quantities from the corn chandler, there is no necessity for such a provision, and room for a week's consumption only is required; but for economical management, space for a load of hay must be calculated on, and also for a similar bulk of straw.

The Corn Chamber is always on the ground floor, if possible, because access to it is wanted four times a day, and it is not convenient to be always running up and down stairs. But it should be raised from the ground, for two reasons—first, to keep the corn dry; and secondly, to keep vermin away, which can only be effected by the use of stone or iron supports, with proper guards above. If economy is studied, and a good granary is provided, corn may be bought by the 100 or 200 bushels, at a much lower rate than from the chandler; but unless provision is made for protecting it from rats and from damp, much more is wasted and spoilt than is saved by a reduction of price. The chamber should be about 12 feet by 8 to hold 100 bushels; and if the consumption is not pretty rapid, a larger space than this is required to turn it over every month or two. Air must be freely admitted, and, of course, it should be kept under lock and key.

Damp Stables are especially to be avoided, whether from newness, or from being partially underground, or from being badly drained. Whatever the cause, it injures the health of the horse, and he can never be kept free from colds, coughs, &c., while in one so constructed as to produce damp. It should therefore be prevented by removing the cause, which may be effected in almost every case, even under-ground, by proper drainage. If a stable *must* be under the surface, it is better to curtail its proportions by building an inside wall, leaving an air-drain all round between it and the old wall, than to allow it to remain damp, and this is generally the cheapest way of effecting the change; for in order to get at the outside there is generally a vast deal of valuable surface to be interfered with, and even then almost as much brickwork must be employed as in the internal wall, which need never be more than nine inches thick, which, with a three-inch interval, will cut off two feet from the length and one foot from the depth, because few stables require the head to be cased, that being already provided for by a separate lining; but sometimes, if very damp, the second wall must even then be built, and in that case another foot must be allowed for.

The Saddle-Room should be of a size proportioned to the number of horses; but even for a single horse it should have provision for drying the saddle or harness, and for heating water. Cupboards for the various stable-utensils should be provided, and

hooks and saddle-stools, or brackets, for the saddles or harness. Sometimes in small establishments these are kept in the groom's sleeping-room, or in the kitchen; and wherever there is a fire they may be well preserved; but the stable itself is always injurious to them, keeping the lining damp, and rusting the metal, of whatever kind it may be. In large harness-rooms, when proper care is taken of the articles placed there, a long curtain, or a sliding set of doors is drawn in front of them, when cleaned and put away. In most of these there is a fire kept constantly burning during the winter, and by its means the saddles and harness are dried, and the water warmed for stable use; but if a saddle-room can be built against the back of a kitchen fireplace, this is seldom needed, and sufficient heat and warm water may be economized to serve the purpose of the stable-man, except perhaps an occasional fire in very wet weather. The harness-room should always be well lighted, and it should not *directly* communicate with the stable, if it is possible to avoid it.

The Stable-Yard requires to be roomy enough to wash a carriage, and therefore large enough to wash a horse. It is a good plan to cover in a small part of it, leaving the sides open, so that a horse may be washed under cover, without exposing him to the rain, and so as to prevent him making a mess in his stall. When the number of horses is such as to allow of the stables being arranged round a square, a shed all round, as in the plan at page 528, is of great utility, inasmuch as in the summer it allows sweating horses to be walked in the cool till they are dry, and in the winter it permits of their being exercised in rainy weather without suffering. Part of this will of course suffice for washing under.

The Stable Appendages always required are buckets, whalebone brooms or besoms, forks, body and dandy brushes, currycombs, mane-combs, bandages, leathers, rubbers, sponges, foot-pickers, and scissors. If for harness horses and for cleaning carriages, there will be wanted also spoke-brushes, mops, jacks, harness-brushes, and brushes for the lining.

The Lodging-Room for the groom or coachman is generally over, or near, the stable; and it should, at all events, be so near as to allow of any unusual noise being heard by him, for sometimes when a horse is cast, or has the colic, he dies for want of that assistance which could be readily given if his state were known.

Sect. 2.—Coachmen and Grooms.

The Varieties and grades of the attendants upon horses are very great, even after excluding all those who have the care of racehorses and first-class hunters. They are, however, chiefly coachmen, grooms, and helpers; the first two having the charge of harness and saddle or gig horses respectively, whilst the last is only an under-strapper, and acts under the superintendence of one or other of the first two. Some of this class of men are very intelligent, honest, and humane, but a very large proportion are ready to rob their masters, and care not how their charge suffer from their neglect or fraud, so that they can indulge their appetites for drinking and other bad habits. This often arises from the ignorance or apathy of the master, for if he either does not known how, or does not care to see that his horses have justice done them, it can scarcely occasion surprise that his servant will not look after his interests better than he does himself. Many a servant would be honest if he thought his dishonesty would be detected, or if he felt sure that his diligence would ensure approbation; but when he finds that, whether he brings his horses out in good condition, or whether he gives them only half their corn, he is equally well thought of, it is more than can be expected from human nature if he continues perfectly unaffected by such treatment. Every master ought to know all the honest secrets of the stable, and should be able to detect when his horses are badly done. Then let him find fault if this is the case, but let him also praise his servant when all is as it should be. In this way encouragement is afforded to the good and honest servant, and the bad one is soon discarded.

The Gentleman's Coachman should be a good groom as well as coachman; but in many families he is allowed a helper under him to do the hard work—such as strapping the horses, and cleaning the dirt off the harness.

Many men, however, engage to look after a pair of horses and a carriage, and do the entire work; but to perform this well, and, in addition, to drive, a man should not be beyond the prime of life, or he will assuredly be unable to dress his horses properly. When it is considered that each horse, *if he goes out*, will altogether take a man more than two hours in the day to dress him, and that the carriage and harness will require, at least, from two to three hours more, it will appear that there is not much leisure left, after the time spent in the drive, and in dressing and cleaning himself, for other work. It should be recollected, that the time I have allotted is fully occupied with hard work, sufficient to make a man sweat freely; and that few men are capable of this for more than seven or eight hours a day, although they may pretend to be engaged for twelve to fourteen. The driving is the most important part of the duties of these men, because upon this depends the safety of their masters or mistresses, and, of course, this is to be cared for before the health of their horses. A coachman, therefore, should be a good whip, and sober, for the direct benefit of his employer; and clever in the stable, as well as industrious and honest, for his advantage, indirectly shown through the care taken of his horses. He should also know all the ordinary slight ailments of the horse, and be able to give a ball, and to make and give mashes, as well as how to prevent swelled legs, or to manage slight wounds, and to perform all those little necessary offices which the sick horse requires. Civility is of course a virtue, the absence of which is easily detected and punished.

The Groom is the man who engages to look after and exercise saddle horses, or those harness horses which are driven by their owners, and which he only drives on occasions when he is especially called upon to do so, or in bringing them from the stable to the door. He should be as capable of managing horses as the coachman, but he need not always be a first-rate whip; though, as he often has to drive his master's horses in his absence, he should be well able to manage the reins. In all other respects he should possess the same qualities as the coachman. Two horses and a gig, or three horses without, comprise the usual work for one man; inasmuch as he has generally to go out with his master for a part of his time.

The Helper is generally a hard-working man, or lad of 18, who is able to strap a horse well, and do all the mechanical work of the stable, but is wholly incapable of taking the management, or is so uncouth in his person as to forbid his employment in livery. The last is a very common reason for some helpers always remaining under-strappers; they are excellent in that capacity, but so unwieldy in their movements that they would disgrace a neat livery, and would sit beside their masters with all their native clownishness. If, however, they are honest, civil, and industrious, they are often very desirable acquisitions to a large stable, and frequently do all the hard work of these establishments. These men often do four horses well, and in livery yards or coaching establishments double that number; though, in this latter case, the horses are of course not so well dressed as in private establishments.

Stable-Boys must learn as boys somewhere or other, because it is a trade which is seldom learnt after this age; but I wonder that any master who can help it encourages their employment, knowing how frequently they play tricks with or neglect his horses. Under a steady and strict coachman they may be made very useful, but they should seldom be trusted to do anything of importance out of his sight. When first put under him he will, of course, show them everything which they have to do by example; and, if naturally quick, they soon learn to carry out all the stable operations in a very efficient manner.

Sect. 3.—Grooming.

By Grooming is understood the general manual arrangement of the horse and his bedding, separating the whole into three portions; the first of which includes his grooming, the next his feeding, and the third his exercising. The grooming begins very early in the morning, but the hour depends very much upon the time when the stable was shut up the night before; for if a pair of horses are kept out till twelve o'clock, they ought not to be

disturbed before seven or eight the next morning. In the usual way, in private stables, six o'clock in summer, and seven in the winter, is the time for beginning work. The first thing is to give the horse a few go-downs of water and to feed him; during which the groom turns back the litter, and "mucks out" the stable, by which is meant sweeping out the wet litter, and the absolute dung dropped during the night. When he has fed, the horse is either at once dressed, or he is taken out to exercise; on returning from which he is pretty liberally watered, and then dressed over thoroughly; for a minute description of this process (which ought to be the same in all stables, though it is often very inefficiently performed), see page 470. After the dressing is over, the horse usually remains till eleven or twelve o'clock, when he is again fed; and then, if not used, he is left till four or five o'clock, when he receives his next feed of corn and a little water. At six or seven o'clock he is whisped over, his bed is turned down, a night-rug, to save soiling the best one, is thrown over his usual clothing, or in some cases substituted for it, and he is locked up for the night, after receiving his last feed and his allowance of hay, which are generally given at from seven to eight o'clock. Such is the ordinary day's work, independently of the results of the use of the horse, by which he is rendered dirty from sweat, or road dirt, or both; and his saddlery or harness also made dirty and soiled.

Dressing after Work is effected as follows, but much depends upon the nature of the work and the state of the roads. In all cases the legs and feet should be washed out, which is done with a bucket of lukewarm water and a brush, beginning on the near side, and washing both without moving to the other. If the weather is very warm he may now be walked about till he is cool; or if he is covered with dirt, his belly and flanks, as well as his tail and legs, may be washed rapidly with warm water. Many grooms use the besom to get this off, but as the body is already wet from the dirt, no harm can result from a repetition of the water, and, as the horse is not rendered nearly so savage by it as by the irritation of the besom, it can be carried out much more thoroughly, and finished in a much shorter time. As soon as he is washed, a rug should be thrown over him, and his legs should be bandaged with flannel; he is then returned to the stable and fed; during which, and without removing the rug, but merely turning up one side, he may be thoroughly dried under his belly and between his legs, and also his tail wiped tolerably dry. After this is done (by which time he will have eaten his corn), he may be dressed over, with the exception of his legs, which still have the bandages on, beginning with his head, and turning him round in his stall for that purpose. Finally, his bandages are removed one by one, and his legs dried and well rubbed down, and then he may be fully clothed and left in his stall as usual.

Sect. 4.—Feeding in the Stable and out.

The Food upon which the horse is fed in Great Britain, in almost all cases, consists of hay or green-meat as the staple, together with the addition of one or more of the following articles—namely, oats, bran, beans, carrots, turnips, or potatoes. Barley is only given to farming-horses in this country, though abroad it is very commonly substituted for oats; as green food, common grass, vetches, lucerne, and rye (common or Italian) are generally given. When green food is used in the stable it is called soiling the horse, and when given in the fields, turning him out to grass.

The Hay given to horses at fast work, whether on the road or for hunting, should be in all cases of upland quality. Meadow or clover-hay is only fit for cart-horses, which require a considerable quantity of fatty matter, and do not sweat to any great extent, nor is their wind tried as in fast work. Green hay is not good, there being less nourishment in it than in properly fermented, and therefore brown, hay; and though it does not prove that the hay is new, as is very commonly supposed, yet it is not nearly so wholesome as the brown variety, provided it is not mouldy, or burnt from overheating. Hay should be cut from the inside of a large rick, at least one year old, and should be very sweet and fragrant; it is better tied together in trusses, which are in most counties 56lb. each,

so that the weight of a load is easily estimated by counting them. Not more than two or three months' consumption should be stowed away at one time, as it is liable to become mouldy and musty, and it will then be refused by horses, or, if taken, it will disagree with their stomachs. The quantity which a full-sized horse at strong but moderately slow work will consume, is about 84lb. per week, or from that to 98lb., which latter quantity some washy large horses absolutely require to keep them in health. There is a vast difference in horses in respect of the weight of hay necessary for their full condition; some will eat nearly twice as much as others, and yet not be half so strong, or look nearly so fleshy and full of health. Although, therefore, it is necessary in cavalry stables, and other large establishments, to give a stated weight to all horses alike, it is only because there would otherwise be no check upon fraud and extravagance, and not from the belief that all can fare exactly alike without some of them feeling the ill-effects of the treatment. I have often had two medium-sized horses in my stable which together lived upon as little as another larger horse in similar condition consumed to his own share. Nevertheless, 12lb. may be considered the average for full-sized horses; but no master should make up his mind that his one horse is sufficiently fed if he has that quantity, for it may very probably happen that he is one of those hungry ones which will require at least one hundredweight per week, especially if the rack is a high one, and the groom is not very careful to replace the wasted hay. In all racks the hay should be lightly put in, and not pressed down, for if it is, the horse will be sure to pull out more than one mouthful at a time, and if his attention is called to the foot of the stall, he will turn his head round and bring a quantity of loose hay with it, even if the rack is as low as it should be.

CHAFF is hay cut up with straw in a chaff-machine, which may be the old box-and-knife used with the hand, or it may consist of any of the various chaff-engines which are now sold by the machine-makers, and worked either by the hand or by horse or steam-power. The hay used is in most stables the coarse parts of the usual quality employed, which would otherwise be rejected, and sometimes even the hay-bands are cut up in this way. It is arranged in the trough of the machine with alternate layers of straw, so that the chaff when cut consists of portions of hay and straw about an inch long, mixed in nearly equal quantities. It is given to many horses as their sole fodder besides their corn; but I do not believe this plan is a good one; and I think that the only use of chaff is to make the horse chew his corn by mixing some chaff with it. If more than this is given the horse does not masticate it nearly so much as he would do in the shape of hay, and therefore digestion is not so well performed. When horses are very hard worked, and are fed almost entirely upon beans, as in coach-work, and when it is an object to get them to feed quickly, so as to lie down as soon as possible, chaff is, I think, better than hay; but in ordinary private stables I cannot advise its use, and this conclusion I have arrived at after a careful trial of both plans for a considerable time.

OATS AND BEANS, together or separately, come under the general name of horse-corn; and most horses at hard work in the winter require both, especially if they are not very young. Oats are always given to horses in private stables, and they form the best general addition to the hay; but sometimes, soon after the horse has changed his coat, he becomes very flagging and unable to bear his ordinary work, especially if he has been much exposed to wet or cold; in this case, the addition to his oats of from half a quartern to a quartern of beans during the day will often renovate his spirits and strength, when he rapidly gains flesh. In young horses this addition may be discontinued after January, but in old ones it should be kept up till the following May, after which month few horses are the better for the extra stimulus afforded by beans. They should always be split, and oats are generally the better for being bruised, or "kibbled," as it is generally called; and for both these purposes a mill is constructed and sold, which, by the alteration of a screw, will adapt itself to either operation. Both oats and beans should be one year old, or at least six months; at which age, if the harvest was a dry one, both oats and beans will often be dry enough.

It is generally supposed that all good oats should be at least 39lb. per imperial bushel; but this is a mistake, for the quality, *as compared with the price*, does not always depend upon the weight. Every horse requires a certain amount of the oatmeal contained in the oats, and so long as he has that quantity, it matters not if a little more chaff or husk is added to it. Hence, as light oats are almost always cheaper, *in proportion*, than heavy ones, it will often answer better to give a horse one pound's worth of light oats than the same sum laid out in heavy ones. In ordinary road-work, when horses seldom have as much corn as they will eat, I have tried the experiment a dozen times; and I have found that a pound laid out in the purchase of inferior corn, *if sweet*, will go further than the same sum expended in the purchase of the first quality. With racehorses and first-rate hunters the case is very different, in them the appetite is the measure of their corn; and, consequently, since most horses will eat the same bulk, whether heavy or light, they are best fed with good sound old English oats at whatever price they may be in the market. Hacks and carriage-horses, however, seldom are allowed more than three or four quarterns a day of English oats; and if they have, instead of these heavy oats, one quartern more of Irish or Welsh, they will do much better. The difference is still greater if it is between half a peck of English and three quarterns of Irish, because most horses like to have their stomachs tolerably filled with their corn, which half a quartern at a feed will scarcely do. Now, when English oats are at 3*s.* 6*d.* per bushel, Irish oats are generally about 2*s.*; and consequently, three quarterns of the Irish may be given for the same price as two of the English, which exactly accords with the calculation I have made above. In purchasing Irish oats care should be taken that they are free from stones, or, if they are mixed with them, they should be removed before being given, by examining the sieve containing them. This is the worst feature in this kind of corn, and sometimes exists to a great extent.

Beans are of all qualities, from the best English to the Egyptian; but as a general rule, for private stables I fancy the English answer the best. They are used more as a stomachic than as regular food; and for that purpose quality is of more importance than quantity. In cart-stables, or for coaching or fly-work, foreign beans may be used, but I have never myself found them answer my purpose well. By purchasing Irish oats of the importers at Liverpool, London, or Gloucester, an immense reduction in price is effected; and they may readily be conveyed by rail to most parts of England, at one penny or twopence per bushel extra.

GRUEL is made by mixing oatmeal in cold water; and about a pint of meal will make four quarts of gruel. This is enough for ordinary occasions, but for a very exhausted horse two pints should be mixed with about the same quantity of water, and boiled for ten minutes, carefully stirring it the while. It should be given with the chill just taken off.

BRAN is the outside coat of wheat removed in the dressing after grinding. It is only used in private stables for mashes and poultices, though sometimes it is given with beans as a regular article of food, just as is the case in cart-stables. With their addition it answers pretty well in slow work, but not nearly so well as oats, and its price alone is a temptation to its use.

THE BRAN MASH is one of the most valuable kinds of food for sick horses, or for preparing horses in pretty good health for physic, or for cooling down those which are to be turned out to grass. It is made either as a *cold mash* or as a *hot mash*—the former being merely bran, with the addition of as much cold water as it will absorb. The HOT BRAN MASH is made by pouring enough boiling water to saturate it, and then covering it up till sufficiently cool to give the horse. As the bran swells considerably, one-third of a bucket of bran is enough to make half a bucket of mash, which is the usual quantity given. Most horses on hard and dry food are the better for this once a week; and it should be given on the night before their rest day, which all horses ought to have; and when so used, it may be allowed to supersede the use of their evening feed of corn; but if it is given more frequently to a costive horse, it must be in addition.

CARROTS, TURNIPS, AND POTATOES are useful to horses doing slow work, and bare of flesh; but they do not answer for fast work, nor for horses which are apt to scour. Of the three, the first is the most suitable to horses; and when they are to be made up for sale, and got very "fresh," as the dealers call it, a few carrots boiled with linseed will effect the object much quicker than any other kind of food, especially in the early spring, when vetches are not to be had. This food is also useful in chronic cough, and will sometimes effect a cure; but it must not be given while the horse is at work, as he is very much inclined to sweat while eating it, and will then lose as much as he gains. Swedish turnips, or potatoes, are substitutes for carrots, but they do not answer the purpose nearly so well. Both of them should be steamed, not simply boiled; or if the latter process is adopted the water should be thrown away, as it is not wholesome for the horse.

BARLEY is sometimes given in slow work either raw or boiled, or malted. Grains also are often mixed with chaff, and given to cart-horses with good effect. I am not aware of any advantage attending the use of this kind of food in private stables, except that sometimes when barley is cheap a horse may be kept at a lower rate than upon oats or beans; and I am inclined to believe that, from the tendency to disease produced by their use, in the long run they would be found much less profitable than ordinary horse-corn.

MAIZE, or INDIAN CORN, has been lately tried in this country, and in America it is found to agree well with all kinds of horses. At present prices it is much cheaper than oats, but it is not suited to very fast work.

LINSEED is a valuable adjunct to horse feed, but it should only be used in small quantities, and for short periods. When employed in this way it makes the skin feel "kind" and soft, and often, as before remarked, gets rid of an obstinate chronic cough. Half a pint is the usual quantity, boiled slowly for some hours, and mixed with bran, or bran and carrots, or sometimes with the usual feed of oats.

THE USUAL APPORTIONMENT OF FOOD is as follows:—Two-thirds of the hay is given at night, and one-third in the morning, with a feed of corn each time; at 11 or 12 in the morning, and at 3 or 4 in the afternoon another feed is given; and the corn is equally divided among these four feeds, whatever it may be.

SOILING is a term used for the feeding of horses on green food in-doors; but as it has already been fully described for hunters at page 532, the reader is referred to that article for its mode of management.

TURNING OUT TO GRASS is useful when the health is injured by long-continued hard work and dry food, or when the legs are sore, or the feet inflamed. For the former state a summer's run is the best remedy, because at that time the grasses are the most sweet and nutritious, and the constitution is not tried by exposure to the cold and wet. A meadow should be chosen where there is plenty of good and sweet grass, and the horse should be gradually prepared for the change, except in the height of summer, by taking off his clothing while in the stable, allowing the dirt to accumulate in his skin, and also reducing the temperature of his box. In the summer, tips to his fore-feet will generally be prudent; but in winter, when the ground is always soft, they are seldom necessary. If the legs or feet are "stale," a winter's run will do far more than the same time occupied in the summer's run, because the object is not only to avoid fresh battering of them on hard ground, but also to lower the whole system by a poor and reducing diet. Winter-grass, therefore, will effect the object very differently from the fattening feed which is met with on the meadows during summer and autumn; and by turning the lame horse out in December great good *to his legs* may be expected when taken up in the following May, before which time it is not to be expected that he will be sufficiently in flesh, and his coat smooth enough for any work. Whether in summer or winter, every horse accustomed to a stable ought to have a hovel to run into, which protects him from flies in the hot days of summer, and from the wind and snow in the cold nights of winter. If in the winter his flesh is wanted to be preserved, hay and corn must be given, and when the horse is to be used early in the spring they always ought to be afforded; but for severe lameness there is nothing like a couple of months' comparative starvation, which keeping him on winter-grass is to the stable-fed horse.

The Straw-Yard affords another mode of improving the legs of the over-worked horse, and into it he is turned during the winter, with a shed to run into, and the soft manure or litter in the middle of the yard to run upon. Hay is given, but seldom more than enough to keep the stomach in order, and barley straw affords the chief sustenance in most cases; sometimes a little hay is given cut as chaff with straw, and in some cases also mixed with a feed or two of corn per day. When a suitable winter pasture cannot be obtained, the straw-yard is very efficacious for inflamed legs and feet; and, as its small extent precludes all galloping about, it is often even more suitable than any open pasture. Tips may be entirely dispensed with, and when the toes are pared down close, as in the "seedy toe," or when the horny foot has come off, as in inflammation or fever of the foot, the straw-yard affords the very best chance of a speedy growth, especially if the regular application of pitch, &c., can be depended on.

Sect. 5.—Water.

Soft Water is in all cases better for horses than hard, hence they are often watered in a brook or pond in preference to the bucket, which is generally replenished from the well. If, therefore, soft water can be easily procured, it should in all cases be given; but I do not think that with our present warm stables it answers well to allow the horse to slake his thirst at the pond or brook at all seasons; cart-horses may do so with impunity, because they are seldom heated with their work, and their stables are comparatively cool. Boiling gets rid of a great proportion of the lime, and where it exists in great quantities it is advisable to give all boiled water.

The Temperature of the water given should in all cases be that of the stable, or very little below it; and so in the warm one the water must be raised to at least 70 degrees of Fahrenheit, by mixing a little hot water with the cold or by leaving the bucket full of water constantly in the stable, and only using it when it has acquired the temperature of the stable. If cold water is given to a horse used to it chilled, and to warm stables, it sets the coat the wrong way directly, and often produces colic, or shivering followed by rheumatism; and this is especially likely when he has undergone any violent exertion, *and is becoming cool from it.* It does not do nearly the harm while the horse is reeking with heat and perspiration that it does when given to the tired horse just cooling down from his exertions. If, however, chilled water is generally given, it should rigidly be adhered to when the horse is travelling, for an animal used to it is far more likely to be injured by cold water given when in a sweat than the one which habitually swallows it at a low temperature with his ordinary food.

The Quantity of Water proper for the horse varies very much, depending upon his tendency to purge, upon the amount of sweat which he loses in his work, and upon the nature of his work; from about one and a half to two ordinary buckets per day is the average for private stables, depending upon the size of the horse and the severity of his work; and if water is allowed to stand constantly in the stall few healthy horses will drink more than two buckets per day. About half a bucket is generally given in the morning, another half in the afternoon, and the remainder the last thing at night. More than a couple of quarts should never be given on the road, even on the hottest day; but this quantity may be repeated every five or six miles with advantage if the weather is very sultry, with or without a little oatmeal. It is seldom advisable to give the full quantity of water immediately before or after the feed of oats, but rather to let the horse drink about two quarts, and half an hour after his feed to let him have the remainder. But if the oats are not given for half an hour, the water will not hurt if all is given at once. Many people prefer a constant supply by means of a water-manger kept full.

Sect. 6.—Bedding.

Wheat Straw is generally adopted in this country for the bedding of horses, being more durable than that from barley. By proper management the manure will pay a considerable part of the cost, which, with this allowance, may be put down on the average at 1*s.* 6*d.* per week. Extravagant grooms use a fresh truss

of straw for each horse every night, but one every other night is quite enough—except in a loose box.

SAWDUST made from deal has been tried with success as far as utility and economy are concerned, but it is more apt to soil the clothing than straw, and does not look so neat and warm as that material. On the other hand, it has the advantage of keeping the feet cool, and with horses subject to chronic laminitis, it is successful in keeping down the temperature of the feet. When there is a sawmill within easy reach, sawdust is worth the trial, but lazy grooms set their faces against it.

SECT. 7.—CLOTHING AND BANDAGING.

THE CLOTHING for private stables may be either composed of the strong serge made on purpose, and cut and bound in the regular way as a quarter-piece, hood, breast-cloth, and pad-cloth; or it may consist of a single large and warm rug, which, however, will last much longer if bound with galloon. In either case a roller with double straps is required to keep the cloth on; and even with the simple rug a breast-girth should be sewn on, so as to keep it over the chest during exposure. In many stables a suit of best clothing, made with good serge, is put on during the day, and a warm rug, or sometimes two, at night, by which means the best is kept clean, and will last a long time without washing. A careful stableman will see that these expensive articles are mended as soon as they show signs of requiring it, as nothing proves more completely the truth of the old adage, "A stitch in time saves nine." Some use in the summer a light suit of brown holland bound with galloon, but I have so often found my horses take cold while wearing it, that I should never try it again. They will stand very well without any cloth on, but if any kind of flaxen material is put on it chills them at once, and they get a rough, and turn their coats the wrong way inevitably; at least such has been the result of my experience. If the weather is very warm the clothing should either be removed entirely, which is the best plan, or a quarter-piece of a very light woollen fabric, such as is sold by all the saddlers, should be put on.

BANDAGES are of two kinds, flannel and calico. Each is composed of about three and a half yards of stuff in length by about eight inches wide. The flannel is of a twilled fabric, made on purpose, and sold at the saddlers; the calico is of the coarse unbleached quality; one end is square, the other has the corners turned down to make a point, and to this a couple of strings, about a foot long, are sewn. This end, with the strings, is rolled up within the rest of the bandage, and consequently remains at the part which finishes the rolling, and then the strings serve to fix it firmly to the leg. Flannel-bandages are used after washing the legs or when they are too cold, as in certain diseases affecting them; or dipped in hot water, and used as fomentations. Calico bandages are employed either as a means of using pressure, or for applying cold by wetting them in cold water, or in lotions expressly prepared.

SECT. 8.—CLIPPING, SINGEING, AND TRIMMING.

CLIPPING is now carried on as a regular trade throughout the whole of Great Britain, and few private grooms, for want of sufficient practice, are able to compete with the regular clipper. These men work in the most wonderfully persevering manner, as their season is a very short one; and I have known two men continue at this tiresome business for twenty hours out of the twenty-four during a whole month, with the sole exception of Sundays. A slight singeing is generally given afterwards, and then a sweat, which is said to prevent cold, and at all events enables the burnt ends of the hair to be rubbed off. A good washing with soap and water answers equally well, and is attended with no danger whatever, if the horse is rapidly washed and as rapidly dried.

Various CLIPPING MACHINES have been lately introduced, by which an ordinary groom can remove the coat, and I have found several of them to be really practicable in the hands of an unskilled man.

SINGEING is now almost always done by gas, and with its aid almost any handy groom can keep a horse's coat in good order, if he is not in too great a hurry, but burns it regularly, and not too much at a time. When gas is not at hand, it is better to send the horse to

it, as the gas-singed coat looks so much smoother than the coat singed with the naphtha-lamp. The practice generally adopted in well-managed stables is to begin to singe in the autumn as soon as the coat has grown longer than is desired, and to repeat the operation as often as it is necessary to do so.

Trimming with scissors is now little practised, but some very hairy-legged horses must have a few hairs removed in that way, or they would look complete cart-horses. All, however, that can be drawn with the aid of a little resin in the hand should be so removed, and the remainder clipped close. The trimming-scissors are also required to square the tail, which should be combed out and held in the position in which it is usually carried while it is being cut; for if it is squared ever so well in any other position, it is out of all shape as soon as it is changed for the natural one, and the trimmer must repeat the operation. Most grooms fancy themselves able to square a tail, but few can do it really well, as they are apt to leave it either too full in the middle, or too hollow, or cut more on one side than the other. The long hairs about the jaw should be pulled out, and what cannot be removed in this way should be singed; but in well-bred horses the fingers will readily clear the jaw.

Sect. 9.—Stable Vices.

Stable Vices may be considered to include the following long list of offences against the code of laws made for the stabled horse, and enforced by the stablemen. They are:—1. Getting loose from the head-stall. 2. Hanging back. 3. Leaping into the manger. 4. Turning round in the stall. 5. Lying under the manger. 6. Halter casting. 7. Casting in the stall. 8. Kicking the stall-post. 9. Weaving. 10. Pawing. 11. Eating the litter. 12. Kicking at man. 13. Biting. 14. Crib-biting. 15. Wind-sucking.

Getting Loose is a very troublesome vice; and many horses are so cunning as almost to defy the efforts of the groom and saddler. If, however, a head-stall is made with a strong throat-lash, and this is tightly buckled, no horse can get it off, because the circumference of the head at the jaw is always greater than that of the neck from the back of the ears to the throat. If the horse bites his halter, a chain must be substituted; but this should be avoided if possible, as it makes a constant noise, and other horses are kept awake by it.

Hanging Back in the Collar is an attempt to get free, by bursting the throat-lash or collar-rein. In some cases great force is applied in this way, and horses have broken their hips from the sudden giving way of the halter; this letting them back, they fall over and injure themselves irremediably. The only cure is a strong chain, and a head-stall that no force will break; after trying to burst which a few times, the horse will almost always desist. If the manger is not very firmly placed, another ring should be fixed in the wall by piercing it and screwing a nut on at the back. The groom should likewise watch for the attempt, and well flog the horse from behind immediately he sees him beginning.

Leaping into the Manger is generally a habit acquired by remaining too long in the stable without exercise, or from being too much threatened with the whip, as in dealers' stables. If a horse is constantly attempting it, he must be kept down by a short halter which will not suffer him to get his nose high enough. Sometimes there is a little difficulty in bringing a horse down from his position; but by going quietly up to his head and pushing him to the opposite side of the stall and at the same time back, he may generally be managed without risk to either man or horse.

Turning Round in the Stall is avoided by the use of two reins, as already mentioned in the description of the Stable and its Appendages, page 826.

Lying Under the Manger is a awkward trick which some young horses acquire, apparently from trying to get out of the way and hide themselves. At times they are unable to get up again from striking their head against the under side of it when they try to rise, and they must even be drawn back by a girth round the breast before they can be rescued from the position, which has even been known to cause a fatal result. The modern low rack is a great preventive of the vice; but sometimes the colt will even get his head under this, and the only

remedy is to board all up flush—an expedient which effectually prevents the head going under.

HALTER CASTING is the getting either leg over the halter, and so being thrown to the ground and kept there. With a rope halter, or with a chain, a very ugly wound is sometimes made in the struggles to free the leg, and often the tendons are exposed and their sheath sadly torn. The accident arises from the horse pawing with his fore-leg, or trying to scratch his head with his hind-foot while the "sinker" attached to the halter is prevented from playing properly, and so leaving the halter or collar-rein hanging loose. The spring-catch described at p. 826, is the proper guard against this accident, inasmuch as, though it does not prevent its occurrence, it removes all injurious consequences, especially where two collar-reins are used, because the leg is seldom over both in one night, and the one being liberated does not affect the other, which still prevents the horse from leaving his stall.

CASTING IN THE STALL is the result of the natural tendency which most horses have to roll completely over, and which, in a state of freedom, is not attended with any danger; though, even in the grass-field, when the ground is hard, I have known the withers seriously injured by constant attempts to roll over. When, however, the attempt is made in the stall, the horse often gets completely thrown upon his back against the wall or the travis, and he is then unable to get back again, and lies powerless, yet struggling fearfully, and often to such an extent as to rupture the colon, and so cause speedy death. Sometimes the horse is found in the morning lying across the stall, doubled up in the most awkward manner, and with his legs inclining towards the manger; at others he is lying back as far as his rein will allow, with his hind-legs partly in the next stall, but always in a helpless condition. There is no preventive against the accident, but it may easily be remedied when discovered, and hence the advantage of the groom sleeping within hearing of his charge. Two or three stirrup-leathers buckled together, or a halter thrown over both legs, will readily draw the horse over on his side, and he then can get up without further assistance.

KICKING THE STALL POST is injurious not only to the kicker, but very frequently to his next neighbour also, who may come in for the blow intended for the inanimate wood. It arises from idleness, and is often continued almost incessantly night and day, except, of course, while the animal is lying down. Hard work is the best remedy, but when that is not practicable, a branch or two of furze nailed to the post will often stop the habit, though in one case I have known it to aggravate a mare almost to madness, and she kicked herself almost blind with fury. Mares are said to be much more subject to this vice than geldings, but as far as my experience goes there is little difference. Logs of wood are commonly applied to the leg, but they are not nearly heavy and severe enough; and if any good is to be done the weight must be of iron or lead. A common heater for a tea-urn, of about 4lb. weight, is about as good as anything, but it should not be put on until a lighter one has been tried for an hour or two, for if a horse is frightened by it he may do himself a serious injury. When, however, he is used to the wooden log, and has got over his first alarm, the iron weight may be buckled on, and will hit him hard enough to stop his frolics in any case. A broad strap should be buckled tightly round the leg, above the pastern, and the weight suspended from it, so as to clear the coronet, which will inflame to a mischievous extent if bruised. Sometimes, moreover, a weight is required for each leg, if the horse kicks both stall-posts.

WEAVING is a restless habit of moving the head in a quick and peculiar way from side to side of the stall, just as the wild beast does in his den. It is only a symptom of a restless disposition, and consequently few "weavers" are good feeders and workers. There is no cure for it; and it often annoys the adjoining horses from the noise made by the collar-reins.

PAWING is from a similar cause, and is evidenced by a constant working away of the litter with the fore-feet. The best remedy is a pair of fetters, which keep the fore-legs close together, and prevent pawing with either. The fetters, or shackles, consist of two padded straps, large enough to encircle the small pastern-bone, and connected by a

short chain of about 10 or 12 inches in length.

Eating the litter is easily prevented by a muzzle, which must be put on immediately after the hay is finished, and kept on through the night. A piece of rock-salt in the manger will, however, often entice the horse from the litter, and perhaps remove the morbid and craving appetite by its restorative powers.

An Inveterate Kicker should be very carefully approached by all parties. Sometimes he requires even more than ordinary caution; in which case a chain is run through a pulley in the stall-post, and from that to his head-stall, so that by pulling it his head may be pulled round towards the post and his heels drawn from it, thereby allowing the groom to go to the head when he is safe from the heels. Most good grooms, however, are able to take care of themselves, and by constant practice they learn to keep the proper distance, either near enough to make the kick a mere push, or far enough to be out of reach.

Biting is managed in the same way as kicking—using the chain, however, to draw the head to the ring of the rack-chain, instead of to the stall-post. In dressing biters a muzzle should always be put on.

Crib-biting is generally a habit, though it may also be a disease; but it is so infectious that it may usually be considered of the former character It is remedied either by a manger of such a form as to prevent the teeth seizing it—that is, wide enough in the front edge—or by a neck-strap buckled on tightly, or by an open iron muzzle, which keeps the teeth off the edge of the manger, and is sometimes furnished with a concealed set of goads, so that when the horse presses down he pricks himself severely. There is no perfect cure for the vice or habit, and when a horse has contracted it he generally loses his extra fat, and becomes lean and starved-looking. Even the muzzle does not entirely remove these appearances, though with it the crib-biter keeps his good looks to a greater extent than without it.

Wind-Sucking is very similar to crib-biting, and is prevented in the same way, the only difference being that the same noise is not made, nor is the manger seized, but there is a quiet swallowing of wind, with the muzzle pressed against the manger, instead of the noisy one experienced in crib-biting. The concealed prongs are here of much greater use than in crib-biting, and are the only effectual remedy against the vice.

Sect. 10.—The Degree of Warmth necessary for the Stabled Horse.

A great outcry has been raised in this country against warm stables, and no doubt much good has been done by the agitation on the subject; but, like all reforms, it may be carried too far, and I am inclined to believe that in many cases it has been. Warmth of some kind is essential to the health of the well-bred horse; for, though the Welsh pony or the galloway may be fitted to contend against cold, the horse of eastern descent is certainly not qualified to do so. From a long experience, I am satisfied that a moderately warm stable, even with its attendant closeness, is better than a large and airy, but consequently cold, one; yet, at the same time, if artificial warmth can be given, the space and ventilation can scarcely be too free. But, *est modus in rebus*—every one must be ruled by the length of his purse, and if he cannot afford large and roomy stables with a stove kept constantly going, he will find that his horses will be far more healthy in a stable that is well cleaned and drained, if they are kept warm by shutting it up pretty closely in severe weather. In the summer the doors and windows may always be open, except in cold nights; but in severe winter weather a very slight access of fresh air can be admitted during that period of the twenty-four hours. During an experience of twenty years, with an average of three or four horses in the stable, I have not altogether had more than half a dozen cases of disease of any kind in my stable, over and above lameness incidental to roadwork; and this with a great variety of horses of all classes and ages. Now, in general, I have had a small confined stable, kept warm but clean, and with a pretty free ventilation, yet not more than the average of private stables; and the most healthy one I have ever had was the most confined and worst ventilated to all appearance—but what fresh air there was entered at the heads of the horses; and I have made the same remark in other stables.

Some large airy ones were notoriously unhealthy, while others, close, dark, and confined, were the reverse; and the conclusion I have arrived at is, that horses kept warm indoors, *if care is taken of them out*, are more healthy on the whole than those kept cool indoors, and (as a consequence of their hardiness as it is called) more exposed to the weather when out. If kept warm, they must assuredly be taken care of; but in that case they are healthy enough; and consequently I arrive at the conclusion that it is not the warmth in the stable, but the neglect out of it, which produces disease. If, however, horses are to be thus exposed, they had better be kept cool, as in hack livery stables; but if not, there is no harm in proper warmth, when united with cleanliness, and caution out of doors.

SECT. 11.—MANAGEMENT OF THE FEET.

This department of stable management is often sadly neglected by the groom who is particular enough in every other respect, but if his master is a judge only of skin and condition, he is too apt to leave the feet to take care of themselves.

AN EXAMINATION OF THE SHOES should be carefully made every morning when the horse comes in from exercise; and if they are at all loose, or the clenches are too high, or the shoes are worn out, they should be renewed or removed at once.

EVERY NIGHT the feet should be well brushed out, and the picker run round the shoe. If the horn is hard and dry, the feet should be stopped with cow-dung and tar, in the proportion of 3 to 1, called "stopping," which ought always to be kept by the groom in a box for the purpose, called the stopping-box; but it is seldom necessary to do this more than once or twice a week, indeed in most feet it will soften the horn too much if used more frequently.

SEVERAL NEW SHOES have recently been introduced, but of these none but that known as the Charlier is deserving of notice. The peculiarity of this shoe is, that it is very light and narrow, and that it is absolutely let into the horn of the foot, by means of a proper instrument, so that it is merely a metallic rim by which the edge of the horn is kept intact. It allows the natural expansion of the frog to take place, dependent on its pressure on the ground, which is interfered with by the ordinary shoe, and thus it has a tendency to prevent contraction of the frog; but, on the other hand, it is not well adapted to wide frogs with thin soles—a state of things very common in carriage horses. For hunters it is exceedingly well suited, and also for hacks and those well-bred harness horses where the horn is strong, the frog sound, and the sole of good thickness. The shoe itself is merely a band of iron about half an inch wide, and three-eighths of an inch deep, in which seven or eight holes are drilled (not punched). It must exactly fit the outline of the sole, and must be let in nearly or quite flush, by means of a drawing-knife provided with a guard fixed half an inch from the end.

PART V.

DISEASES OF THE DOG AND HORSE.

BOOK 1.—GENERAL PRINCIPLES OF PATHOLOGY.

Sect. 1.—Definition of Terms.

By Pathology is to be understood the science which treats of disease, and describes the alterations which are produced by it, whether evidenced by *symptoms* during life, or by *morbid appearances* after death.

Symptomatology, or the science which treats of and describes symptoms, is the most valuable section of the healing art, and is purely the result of observation and of comparison, since no two sets of symptoms are exactly alike. When a series of symptoms are found always to occur in nearly the same order, and with nearly the same variations, a particular disease is said to exist, and a name is assigned to it by the physician or surgeon. The collection and classification of these diseases constitute the science of Nosology.

Morbid or Pathological Anatomy is to morbid appearances what Nosology is to Symptomatology; that is, it groups together and describes the various morbid appearances found on dissection, and connects their existence with the previous condition of the patient.

Medicine, whether in man or in the lower animals, embraces a consideration of the diseases (including their symptoms and morbid appearances) which affect internal organs.

Surgery, in like manner, treats of the symptoms and morbid appearances found in external diseases and in accidents, as well as in all those cases which require manual operations; but it is not always easy to separate the one class from the other, and in veterinary medicine it is not attempted. In practice upon man there is often this distinction made in theory, though it is seldom kept up strictly in practice.

The phrase, Materia Medica, in ordinary *parlance*, includes the description uses, and mode of action of all medicines, with their doses, and the best mode of prescribing and administering them, and in veterinary medicine a separate and distinct pharmacopœia is required for this purpose.

Sect. 2.—Principal Diseased Conditions.

In the lower animals, although domesticated, the diseases are much less complicated than in the human subject, for various reasons; but still, taking into consideration the wide difference between the dog, horse, cow, and sheep, to say nothing of swine and poultry, the veterinary practitioner has a wide field for the exercise of his powers of observation. But in almost all the domestic animals, although the symptoms and treatment vary considerably, the following will be the chief diseases to which they are subject—viz.: first, febrile diseases, contagious and non-contagious; secondly, inflammatory diseases; thirdly, diseases accompanied with want of tone; fourthly, diseases resulting from over-feeding; fifthly, specific diseases; and sixthly, accidents. In order, therefore, to understand their nature, a few remarks will be necessary upon fever, inflammation, want of tone, and over-feeding.

Sect. 3.—Varieties of Fever.

By Fever, we understand a diseased condition of the system, in which all, or nearly all, the secretions and functions are diminished or deranged. The nervous system, the respiratory and circulating systems, the organs of nutrition and depuration, and, even those of reproduction, are all affected, and their actions to a certain extent suspended. And this is the case whether the fever is of an ephemeral kind, or whether it is of the most virulent typhoid nature. The affection of the nervous system is shown by the langour

and torpor, or sometimes by the unnatural excitement, which exists. That of the respiration and circulation by the very rapid or very slow breath, and similar affection of the heart. The disorder of the organs of nutrition is evidenced by the loss of appetite, and the extraordinary degree of emaciation which rapidly shows itself; and that of the organs of depuration by the state of the fæces, urine, and perspiration.

FEVERS are usually divided into *idiopathic*, or those occurring from an agent acting on the blood or nervous system; and *symptomatic*, or those resulting form some local affection or accident. The former are again divided into *contagious* and *non-contagious*, and also into *continued* and *intermitting* or *remittent;* but it will be sufficient for our purpose to examine into fever in the following forms—first, simple ephemeral fever; secondly, simple epidemic fever, or influenza; thirdly, typhus fever; fourthly, rheumatic fever; fifthly, small-pox; sixthly, symptomatic fever.

SECT. 4.—INFLAMMATION.

INFLAMMATION is a condition of a part characterized by increased *heat*, *redness*, *pain*, and *swelling*, when fully developed; though there may be inflammation without the existence of all these symptoms in a state perceptible to the senses. There are two kinds of inflammation—first, the *active* inflammation, in which the blood is driven with increased force through the arteries supplying the part, which throb most perceptibly to the touch; and secondly, the *atonic* species of inflammation, in which there appears to be a tendency to loss of power in the capillaries, by which the blood is retarded rather than any increased action in any part. Closely allied to this atonic inflammation is *congestion*, which, however, seems to be more confined to the veins than to the arteries; and is very sudden in its attack, and as rapid in its departure. Inflammation ends—first, by resolution, or cure, leaving no sign; secondly, by the formation of matter, or *pus*, as it is called; thirdly, by the pouring out of lymph; fourthly, by the pouring out of serum; and fifthly, by the pouring out of mucus.

INFLAMMATION also is distinguished according to the structure of the body which it attacks. Thus, there is an inflammation peculiar to serous membranes, another confined to mucous membranes, another to the actual substance (*parenchyma*) of organs, a fourth to the skin, a fifth to fibrous parts (*rheumatic*). But in many cases inflammation extends to two adjacent tissues at the same time; as in the case of pneumonia and bronchitis, which generally run one into the other.

SECT. 5.—DISEASES ARISING FROM WANT OF TONE, OR FROM OVER-FEEDING.

THESE DISEASES are generally the result of mismanagement, either from over-crowding, or insufficient or improper feeding; or frequently from excess of provender in proportion to the work. When animals are crowded together, especially if not kept very clean, their blood is completely poisoned by the noxious emanations produced by their close approximation. Nature seems to put a limit upon the population of the earth, either by man or the lower animals, all which are speedily cut off by epidemics whenever they are accumulated in great numbers; but this is especially the case in the lower animals, in which over-crowding is much more rapidly manifest in its effects, than in man. The partridge, the grouse, the sheep, and the hare, soon die off if they are collected in too great numbers, even though, apparently, proper food is presented to them. But when animals are confined in close apartments, as is the case with the dog and horse, and in large numbers, the deaths frequently become so numerous as to alarm the proprietor, and when almost too late proper precautions are often taken. I have seen kennels in which 20 or 30 high-bred greyhounds had been collected in one large apartment, and never cleaned out for months at a time; and yet they were expected to be healthy, and large sums were invested upon their success in public coursing. If these animals are to be kept in health, too great an attention can scarcely be paid to separation into small parties, and to cleanliness. Hence, small kennels, and stables divided into a small number of stalls, will always be desirable; and if these are kept clean, and feeding and exercise carried out upon proper principles, the diseases to which I am now referring will seldom make their appearance.

PART V.

DISEASES OF THE DOG AND HORSE.

BOOK II.—ORDINARY DRUGS USED FOR THE DOG AND HORSE, AND THEIR MODE OF ADMINISTRATION.

CHAPTER I.

THE ACTION OF MEDICINES, AND THE FORMS IN WHICH THEY ARE GENERALLY PRESCRIBED.

Sect. 1.—Alteratives.

Alteratives are intended to produce a fresh and healthy action, instead of the previous disordered function. The precise mode of action is not well understood, and it is only by the results that the utility of these medicines is recognised.

Alteratives for Dogs:—

(1) Æthiops mineral, 2 to 5 grains.
Powdered ginger, ½ to 1 grain.
Powdered rhubarb, 1 to 3 grains.
Mix, and form into a pill with syrup, to be given every evening.

(2) Plummer's pill, 2 to 5 grains.
Extract of hemlock, 2 to 3 grains.
Mix, and give every night.

(3) Stinking hellebore, 5 to 8 grains.
Powdered rhubarb, 2 to 4 grains.
Mix, and form into a pill, to be given every night.

Alteratives for Horses:—

(4) In Disordered States of the Skin.
Emetic tartar, 5 ounces.
Powdered ginger, 3 ounces.
Opium, 1 ounce.
Syrup enough to form 16 balls; one to be given every night.

(5) Simply Cooling.
Barbadoes aloes, 1 ounce.
Castile soap, 1½ ounce.
Ginger, ½ ounce.
Syrup enough to form 6 balls; one to be given every morning.

(6) In Strangles.
Barbadoes aloes, 1 ounce.
Emetic tartar, 2 drachms.
Castile soap, 2 drachms. Mix.

(7) Alterative Ball for General Use.
Black sulphuret of antimony, 2 to 4 drachms.
Sulphur, 2 drachms.
Nitre, 2 drachms.
Linseed meal and water enough to form a ball.

(8) For Generally Defective Secretions.
Flowers of sulphur, 6 ounces.
Emetic tartar, 5 to 8 drachms.
Corrosive sublimate, 10 grains.
Linseed meal mixed with hot water, enough to form six balls, one of which may be given two or three times a week.

(9) In Debility of Stomach.
Calomel, 1 scruple.
Aloes, 1 drachm.
Carscarilla.
Gentian, and
Ginger, of each in powder, 1 drachm.
Castile soap, 3 drachms.
Syrup enough to make a ball, which may be given twice a week, or every other night.

Sect. 2.—Anodynes.

Anodyne Medicines are given either to soothe the general nervous system, or to stop diarrhœa; or sometimes to relieve spasm, as in colic or tetanus. Opium is the chief anodyne used in veterinary medicine, and it may be employed in very large doses.

Anodyne Prescriptions for Dogs.

(1) For Slight Purging.
Prepared chalk, 2 drachms.
Aromatic confection, 1 drachm.
Tincture of opium, 5 to 8 drachms.
Rice-water, 7 ounces.
Mix; dose, two tablespoonfuls after every loose motion.

(2) For Long-Continued Purging.

Diluted sulphuric acid, 3 drachms.
Tincture of opium, 2 drachms.
Compound tincture of bark, 1 ounce.
Water, 6½ ounces.

Mix; two tablespoonfuls every four hours.

(3) Castor-oil, 2 ounces.
Tincture of opium, 1 ounce.

Mix by shaking; a tablespoonful night and morning while the bowels are loose.

(4) Powdered opium, ½ to 2 grains.
Prepared chalk, 5 to 10 grains.
Catechu, 5 grains.
Powdered ginger, and
Powdered caraways, of each 1 to 3 grs.

Mix, and form it into a pill with syrup, and give every three hours.

Anodyne Preparations for the Horse.

(5) In Colic.

Powdered opium, ½ to 2 grains.
Castile soap, and
Camphor, of each 2 drachms.
Ginger, 1½ drachm.

Make into a ball with liquorice powder and treacle, and give every hour while the pain lasts. It should be kept in a bottle or bladder.

(6) Anodyne Ball (ordinary).

Opium, ½ to 1 drachm.
Castile soap, 2 or 4 drachms.
Ginger, 1 to 2 drachms.
Powdered aniseed, ½ to 1 ounce.
Oil of caraway seeds, ½ drachm.

Syrup enough to form a ball, to be dissolved in a half pint of warm ale, and given as a drench.

(7) Anodyne Drench in Superpurgation, or ordinary Diarrhœa.

Gum arabic, 2 ounces.
Boiling water, 1 pint.
Dissolve, and then add
Oil of peppermint, 25 drops,
Tincture of opium, ½ ounce.

Mix, and give night and morning, if necessary.

(8) In Chronic Diarrhœa.

Powdered chalk and gum arabic, of each 1 ounce.
Tincture of opium, ½ ounce.
Peppermint water, 10 ounces.

Mix, and give night and morning.

Sect. 3.—Antispasmodics.

Antispasmodics, as their name implies, are medicines which are intended to counteract excessive muscular action, called *spasm*, or in the limbs, *cramp*. This deranged condition depends upon a variety of causes, which are generally of an irritating nature; and its successful treatment will often depend upon the employment of remedies calculated to remove the cause, rather than directly to relieve the effect. It therefore follows that, in many cases, the medicines most successful in removing spasm will be derived from widely separated divisions of the *materia medica*, such as aperients, anodynes, alteratives, stimulants, and tonics. It is useless to attempt to give many formulas for their exhibition; but there are one or two medicines which exercise a peculiar control over spasm, and I shall give them without attempting to analyse their mode of operation.

Antispasmodics for the Dog:—

(1) Generally Antispasmodic.

Tincture of opium, and
Sulphuric æther, of each, ½ to 1 dr.
Camphor mixture, 1 ounce.

Mix, and give every two hours till the spasm leaves.

(2) Antispasmodic Injection.

Laudanum.
Sulphuric æther, and
Spirit of turpentine, of each, 1 to 2 drachms.
Gruel, 3 to 6 ounces. Mix.

Antispasmodics for the Horse:—

(3) For Colic.

Spirit of turpentine, 3 ounces.
Tincture of opium, 1 ounce.

Mix with a pint of warm ale, and give as a drench.

(4) Spirits of turpentine, 3½ ounces.
Tincture of opium, 1½ ounce.
Barbadoes aloes, 1 ounce.

Powder the aloes, and dissolve in warm water; then add the other ingredients, and give as a drench.

(5) Clyster in Colic.

Spirits of turpentine, 6 ounces.
Aloes, 2 drachms.

Dissolve in 3 quarts of warm water, and stir the turpentine well into it.

(6) Antispasmodic Drench.

Gin, 4 to 6 ounces.
Tincture of capsicum, 2 drachms.

Tincture of opium, 3 drachms.
Warm water, 1½ pint.
Mix, and give as a drench, *when there is no inflammation.*

Sect. 4.—Aperients.

Aperients, or purges, are those medicines which quicken or increase the evacuations from the bowels, varying, however, a good deal in their mode of operation. Some act merely by exciting the muscular coat of the bowels to contract; others cause an immense watery discharge, which, as it were, washes out the bowels; whilst a third set combine the action of the two. The various purges also act upon different parts of the canal, some stimulating the small intestines, whilst others pass through them without affecting them, and only act upon the large bowels; and others, again, act upon the whole canal. There is a third point of difference in purges, depending upon their influencing the liver in addition, which mercurial purgatives certainly do, as well as rhubarb and some others, and which effect is partly due to their absorption into the circulation, so that they may be made to act, by injecting into the veins, as strongly as by actual swallowing, and their subsequent passage into the bowels. Purgatives are likewise classed, according to the *degree* of their effect, into laxatives acting mildly, and drastic purges acting very severely.

Aperients for the Dog:—

(1) A Gentle Aperient Bolus.

Jalap in powder, 8 grains.
Barbadoes aloes, 15 grains.
Ginger, 2 grains.
Castile soap, 10 grains.
Mix with syrup, and form a bolus, or, for small dogs, 2 or 3 boluses.

(2) Strong Aperient Pill.

Podophyllin, ⅓ grain.
Compound rhubarb pill, 6 grains.
Make into a pill, and give when the liver is not acting.

(3) A Good Aperient Bolus.

Blue pill, ½ scruple.
Com. ext. of colocynth, 1 scruple.
Powdered rhubarb, 5 grains.
Oil of aniseed, 2 drops.
Mix, and give to a large dog, or divide into two or three for medium-sized or smaller ones.

(4) Castor-Oil Mixture.

Castor-oil, ½ pint.
Tincture of opium, ½ ounce.
Oil of aniseed, 1 drachm.
Olive oil, 2 ounces.
Mix, and give one, two, or three tablespoonfuls, according to the size of the dog.

(5) Drastic Purgative, producing Watery Evacuations.

Jalap, 10 grains.
Epsom salts, 2 drachms.
Subcarbonate of soda, 10 grains.
Infusion of senna, 1 ounce.
Tincture of senna, 2 drachms.
Tincture of ginger, 15 grains.
Mix, and give the whole, or one-half or one-third, as the size may allow.

(6) The Strongest Purgative, but often rejected by the Stomach.

Croton oil, ½ to 1½ drop.
Powdered opium, 1 to 3 grains.
Linseed meal, 10 grains.
Mix the meal with boiling water, and then add the oil and opium.

Aperients for the Horse, commonly called Physic:—

(7) Ordinary Physic Balls.

Barbadoes aloes, 3 to 8 drachms.
Hard soap, 4 drachms.
Ginger, 1 drachm.
Dissolve in as small a quantity of boiling water as will suffice; then slowly evaporate to the proper consistence, by which means griping is avoided.

(8) A Warmer Physic Ball.

Barbadoes aloes, 3 to 8 drachms.
Carbonate of soda, ½ drachm.
Aromatic powder, 1 drachm.
Oil of caraway, 12 drops.
Dissolve as above, and then add the oil.

(9) Gently Laxative Ball.

Barbadoes aloes, 3 to 5 drachms.
Rhubarb powder, 1 to 2 drachms.
Ginger, 2 drachms.
Oil of caraway, 15 drops.
Mix, and form into a ball, as in No. 7.

(10) Stomachic Laxative Balls, for Washy Horses.

Barbadoes aloes, 3 drachms.
Rhubarb, 2 drachms.
Ginger, and
Cascarilla powder, of each 1 drachm.

Oil of caraway, 15 drops.
Carbonate of soda, 1½ drachm.
Dissolve the aloes as in No. 7, and then add the other ingredients.

(11) PURGING BALLS WITH CALOMEL.

Barbadoes aloes, 3 to 6 drachms.
Calomel, ½ to 1 drachm.
Rhubarb, 1 to 2 drachms.
Ginger, ½ to 1 drachm.
Castile soap, 2 drachms.
Mix as in No. 7.

(12) LAXATIVE DRENCH.

Barbadoes aloes, 3 to 4 drachms.
Canella alba, 1 to 2 drachms.
Salt of tartar, 1 drachm.
Mint water, 8 ounces. Mix.

(13) ANOTHER LAXATIVE DRENCH.

Castor-oil, 3 to 6 ounces.
Barbadoes aloes, 3 to 5 drachms.
Carbonate of soda, 2 drachms.
Mint water, 8 ounces.
Mix, by dissolving the aloes in the mint water, by the aid of heat, and then adding the other ingredients.

(14) A MILD OPENING DRENCH.

Castor-oil, 4 ounces.
Epsom salts, 3 to 5 ounces.
Gruel, 2 pints. Mix.

(15) A VERY MILD LAXATIVE.

Castor-oil, and
Linseed oil, 4 ounces of each.
Warm water, or gruel, 1 pint. Mix.

(16) USED IN THE STAGGERS.

Barbadoes aloes, 6 drachms.
Common salt, 6 ounces.
Flour of mustard, 1 ounce.
Water, 2 pints. Mix.

(17) A GENTLY COOLING DRENCH IN SLIGHT ATTACKS OF COLD.

Epsom salts, 6 to 8 ounces.
Whey, 2 pints. Mix.

(18) PURGATIVE CLYSTER.

Common salt, 4 to 8 ounces.
Warm water, 8 to 16 pints.

SECT. 5.—ASTRINGENTS.

ASTRINGENTS are supposed to produce contraction in all living animal tissues with which they come in contact, whether in the interior or exterior of the body; and whether immediately applied or by absorption into the circulation. But great doubt exists as to the exact mode in which they act; and, as in many other cases, we are obliged to content ourselves with their effects, and to prescribe them empirically. They are divided into astringents administered by the mouth, and those applied locally to external ulcerated or wounded surfaces.

ASTRINGENT BOLUSES FOR THE DOG useful in

(1) DIABETES OR HÆMORRHAGE.

Powdered opium, 2 to 3 grains.
Gallic acid, 4 to 6 grains.
Alum, 5 to 10 grains.
Powdered bark, 10 grains.
Linseed meal, enough to form a bolus, to be given to a large dog (or divided for a small one) two or three times a day.

(2) Nitrate of silver, ½ grain.
Crumb of bread, enough to make a small pill. To be given twice a day, or divided according to the size of the dog.

(3) ASTRINGENT WASH FOR THE EYES.

Sulphate of zinc, 5 to 8 grains.
Water, 2 ounces. Mix.

(4) Goulard extract, 1 drachm.
Water, 1 ounce. Mix.

(5) Nitrate of silver, 2 to 8 grains.
Water, 1 ounce. Mix.

(6) WASH FOR THE PENIS.

Sulphate of zinc, 6 to 10 grains.
Water, 1 ounce. Mix.

(7) Chloride of zinc, ½ to 1½ grain.
Water, 1 ounce. Mix.

(8) ASTRINGENT OINTMENT FOR PILES.

Gallic acid, 10 grains.
Goulard extract, 15 drops.
Lard, 1 ounce. Mix.

(9) ASTRINGENT REMEDIES FOR THE HORSE: FOR BLOODY URINE.

Powdered catechu, ½ ounce.
Alum, ½ ounce.
Cascarilla bark in powder, 1 to 2 drachms.
Liquorice powder and treacle, enough to form a ball, to be given twice a-day.

(10) FOR DIABETES.

Opium, ½ drachm.
Ginger powdered, 2 drachms.
Oak bark, powdered, 1 ounce.
Alum, as much as the tea will dissolve.
Camomile tea, 1 pint.
Mix for a drench.

(11) External Astringent Powder for Ulcerated Surfaces.

Powdered alum, 4 ounces.
Armenian bole, 1 ounce.

(12) White vitrol, 4 ounces.
Oxide of zinc, 1 ounce. Mix.

(13) Astringent Lotion.

Goulard extract, 2 to 3 drachms.
Water, ½ pint.

(14) Sulphate of copper, 1 to 2 drachms.
Water ½ pint. Mix.

(15) Astringent Ointment for Sore Heels.

Superacetate of lead, 1 drachm.
Lard, 1 ounce. Mix.

(16) Another for the Same.

Nitrate of silver powdered, ½ drm.
Goulard extract, 1 drachm.
Lard, 1 ounce. Mix.

Sect. 6.—Blisters.

Blisters are applications which inflame the skin, and cause watery bladders to form upon it; they consist of two kinds, one for the sake of counter-irritation, by which the original disease is lessened, in consequence of the establishment of this irritation at a short distance from it. The other, commonly called "sweating," in veterinary surgery, by which a discharge is obtained from the vessels of the part itself, which are in that way relieved and unloaded; there is also a subsequent process of absorption in consequence of the peculiar stimulus applied.

Blisters for Dogs or Horses:—

(1) Mild Blister Ointment (Counter Irritant).

Hog's lard, 4 ounces.
Venice turpentine, 1 ounce.
Powdered cantharides, 6 drachms.
Mix, and spread.

(2) Stronger Blister Ointment (Counter Irritant).

Spirit of turpentine, 1 ounce.
Sulphuric acid, by measure, 2 drachms.
Mix carefully in an open place, and add
Hog's lard, 4 ounces.
Powdered cantharides, 1 ounce.
Mix, and spread.

(3) Very Strong Blister (Counter Irritant).

Strong mercurial ointment, 4 oz.
Oil of origanum, ½ ounce.
Finely-powdered euphorbium, 3 dr.
Powdered cantharides, ½ ounce.
Mix, and spread.

(4) Rapidly Acting Blister (Counter Irritant).

Best flour of mustard, 8 ounces, made into a paste with water.
Add spirit of turpentine, 2 ounces.
Strong liquor of ammonia, 1 ounce.
This is to be well rubbed into the chest, belly, or back, in cases of acute inflammation.

(5) Sweating Blister.

Strong mercurial ointment, 2 ounces.
Oil of origanum, 2 drachms.
Corrosive sublimate, 2 drachms.
Cantharides powdered, 3 drachms.
Mix, and rub in with the hand.

(6) Strong Sweating Blister, for Splents, Ring-Bones, Spavins, &c.

Red iodide of mercury, 1 to 1½ drachm.
Lard, 1 ounce.
To be well rubbed in the legs after cutting the hair short: and followed by the daily use of arnica, in the shape of a wash, as follows, which is to be painted on with a brush:—

Tincture of arnica, 1 ounce.
Water, 12 to 15 ounces. Mix.

(7) Tincture of Iodine, which should be painted on with a brush daily, until it causes the cuticle to exfoliate. It may then be omitted for a few days, to be resumed after that interval.

Sect. 7.—Caustics.

Cautics are substances which burn away the living tissues of the body, by the decomposition of their elements. They are of two kinds—viz., first, the actual cautery, consisting in the application of the burning iron, and called firing; and, secondly, the potential cautery, by means of the powers of mineral caustics, such as potash, lunar-caustic, &c.

Firing is used extensively upon horses for inflammation of the legs, but it is seldom employed upon the dog, who does not suffer in the same way,

and to the same extent. A set of firing-irons is heated to a great heat, and one at a time is lightly applied across the limb, or in lines up and down, according to the nature of the disease. This excites a very great amount of swelling and inflammation, by which the mischief is often abated, and is followed also by a contraction of the skin, which appears to act as a bandage in the weak state of the vessels of the legs which often occurs. The firing is generally followed by blistering, in order to keep up the inflammation, and at least three months must be consumed before the fired horse, if thoroughly operated on, will be fit for work.

STRONG SOLID CAUSTICS are as follows:

(1) FUSED POTASS, difficult to manage, because it runs about in all directions, and little used in veterinary medicine.

(2) LUNAR-CAUSTIC, or nitrate of silver, very valuable to the veterinary surgeon, and constantly used to apply to profuse granulations.

(3) SULPHATE OF COPPER, almost equally useful, but not so strong as lunar-caustic; it may be well rubbed in to all high granulations, as in broken knees and similar growths.

(4) CORROSIVE SUBLIMATE in powder, which acts most energetically upon warty growths, but should be used with great care and discretion. It may safely be applied to small surfaces, but not without a regular practitioner to large ones. It should be washed off after remaining on a few minutes.

(5) YELLOW ORPIMENT, not so strong as the corrosive sublimate, and may be used with more freedom. It will generally remove warty growths, by picking off their heads and rubbing it in.

STRONG LIQUID CAUSTICS:—

(6) Sulphuric acid, or nitric acid, may be used either in full strength or diluted with an equal quantity of water; but it must be used with great caution, as it destroys the skin rapidly.

(7) IN CANKER OF THE FOOT.

Quicksilver, 1 ounce.
Nitric acid, 2 ounces.

Mix in an earthen vessel, and when cold put into a wide glass bottle, and cork it. It may be mixed with lard, in the proportion of 1 to 3.

(8) A similar application, which may be used alternately with the last—

Copper filings, ½ ounce.
Nitric acid, 1 ounce.

Mix, and use in the same way.

(9) Muriate of antimony called butter of antimony; a strong but rather unmanageable caustic, and used either by itself or mixed with more or less water.

MILD SOLID CAUSTICS:—

(10) Verdigris, either in powder or mixed with lard as an ointment, in the proportion of 1 to 3.

(11) Red precipitate, do., do.

(12) Burnt alum, used dry.

(13) Powdered white sugar.

MILD LIQUID CAUSTICS:—

(14) Solution of nitrate of silver, 5 to 15 grains, to the ounce of distilled water.

(15) Solution of blue vitriol, of about double the above strength.

(16) Chloride of zinc, 3 grains, to the ounce of water.

SECT. 8.—CHARGES.

CHARGES are adhesive plasters which are spread while hot on the legs, and at once covered with short tow, so as to form a strong and unyielding support while the horse is at grass.

(1) ORDINARY CHARGE.

Burgundy pitch, 4 ounces.
Barbadoes tar, 6 ounces.
Beeswax, 2 ounces.
Red lead, 4 ounces.

The three first are to be melted together, and afterwards the lead is to be added. The mixture is to be kept constantly stirred until sufficiently cold to be applied. If too stiff (which will depend upon the weather), it may be softened by the addition of a little lard or oil.

(2) ARNICA CHARGE.

Canada balsam, 2 ounces.
Powdered arnica leaves, ½ ounce.

The balsam to be melted and worked up with the leaves, adding spirits of turpentine if necessary. When thoroughly mixed, to be well rubbed into the whole leg in a thin layer, and to be covered over with the Charge No. 1, which will set on its outside and act as a bandage, while the arnica acts as a restorative to the weakened vessels. This is an excellent application.

Sect. 9.—Cordials.

Cordials are medicines which act as warm temporary stimulants, augmenting the strength and spirits when depressed, and often relieving an animal from the ill-effects of over-exertion. They act much in the same way on the horse and dog, but require to be given in different doses.

Cordials for the Dog are as follows:—

(1) Cordial Balls.

Powdered caraway seeds, ½ to 1½ drachms.
Ginger, 20 to 40 grains.
Oil of cloves, 3 to 8 drops. Mix.

(2) Greyhound cordial balls, see training of the Greyhound, page 261.

(3) Cordial Drench.

Tincture of cardamoms, ½ to 1 drachm.
Sal volatile, 15 to 30 drops.
Infusion of gentian, ½ to 1 drachm.
Camphor mixture, 1 ounce. Mix.

Horse Cordials:—

(1) Cordial Balls.

Powdered caraway seeds, 6 drachms,
Ginger, 2 drachms.
Oil of cloves, 20 drops.
Treacle, enough to make into a ball.

(2) Powdered aniseed, 6 drachms.
Powdered cardamoms, 2 drachms.
Powdered cassia, 1 drachm.
Oil of caraways, 20 drops.
Mix with treacle into a ball.

(3) Cordial Drench.

A quart of good ale warmed and with plenty of grated ginger.

(4) Cordial and Expectorant.

Powdered aniseed, ½ ounce.
Powdered squill, 1 drachm.
Powdered myrrh, 1½ drachm:
Balsam of Peru, enough to form a ball.

(5) Liquorice powder, ½ ounce.
Gum ammoniacum, 3 drachms.
Balsam of Tolu, 1½ drachm.
Powdered squill, 1 drachm.
Linseed meal and boiling water, enough to form into a mass.

Sect. 10.—Demulcents.

Demulcents are medicines which are used in irritations of the bowels, kidneys, and bladder; and they are equally useful and act in the same way on the dog and horse; the former, of course, requiring much smaller quantities than the latter.

(1) Demulcent Drench.

Gum arabic, ½ ounce.
Water, 1 pint.
The whole to be given to the horse, or half a teacupful to a moderate-sized dog.

(2) Linseed, 4 ounces.
Water, 1 quart.
Simmer till a strong and thick decoction is obtained, and give as above.

(3) Marshmallow Drench.

Marshmallows, a double handful.
Water, 1 quart.
Simmer, as in No. 2, and use in the same way.

Sect. 11.—Diaphoretics.

Diaphoretics are medicines which increase the insensible perspiration; but, as in the dog the skin is not capable of perceptible action of this kind, their use is confined to the horse.

(1) In Hide-Bound.

Emetic tartar, 1½ drachms.
Camphor, ½ drachm.
Ginger, 2 drachms.
Opium, ½ drachm.
Oil of caraway, 15 drops.
Linseed meal and boiling water, to form a ball, which is to be given twice or thrice a-week.

(2) In Hide-bound (but not so efficacious).

Antimonial powder, 2 drachms.
Ginger, 1 drachm.
Powdered caraways, 6 drachms.
Oil of aniseed, 20 drops.
Mix as above.

These remedies require exercise in clothing to bring out their effects, after which the horse should be whisped till quite dry.

Sect. 12.—Digestives.

Digestives are applications which promote suppuration, and the healing of wounds or ulcers. They are equally useful in the dog and horse.

(1) Digestive Ointment.

Red precipitate, 2 ounces.
Venice turpentine, 3 ounces.
Beeswax, 1 ounce.
Hog's lard, 4 ounces.
Melt the last three ingredients over a slow fire, and when nearly cold, stir in the powder.

Sect. 13.—Diuretics.

Diuretics are medicines which promote the secretion and discharge of urine, the effect being produced in a different manner by different medicines; some acting directly upon the kidneys by sympathy with the stomach, while others are taken up by the blood-vessels, and in their elimination from the blood cause an extra secretion of the urine. In either case their effect is to diminish the watery part of the blood, and thus promote the absorption of fluid effused into any of the cavities, or into the cellular membrane, in the various forms of dropsy.

(1) Diuretic Bolus for the Dog.

Nitre, 6 grains.
Digitalis, 1 grain.
Ginger, 4 grains.

Linseed meal and water to form a bolus, which is to be given night and morning, or half to a small dog.

(2) Diuretic and Alterative.

Iodide of potassium, 3 grains.
Nitre, 4 grains.
Digitalis, ½ grain.
Extract of gentian, 5 grains.

Mix, and give twice a-day, or half to a small dog.

(1) Stimulating Diuretic Ball for the Horse.

Powdered resin,
Sal prunella,
Castile soap, of each 3 drachms.
Oil of juniper, 1 drachm. Mix.

(2) A more Cooling Diuretic Ball.

Powdered nitre, ½ to 1 ounce.
Camphor, and
Oil of juniper, of each 1 drachm.
Soap, 3 drachms.

Mix, adding linseed meal enough to form a ball.

(3) Diuretic Powder for a Mash.

Nitre, and
Resin, of each ½ to ¾ ounce. Mix.

(4) Another more Active Powder.

Nitre, 6 drachms.
Camphor, 1½ drachms. Mix.

Sect. 14.—Embrocations.

Embrocations or Liniments are stimulating or sedative external applications, intended to reduce the pain and inflammation of internal parts when rubbed into the skin with the hand.

(1) Mustard Embrocation.

Best flour of mustard, 6 ounces.
Liquor of ammonia, 1½ ounce.
Oil of turpentine, 1½ ounce.

Mix with sufficient water to form a thin paste.

(2) Stimulating Embrocation.

Camphor, ½ ounce.
Oil of turpentine, and
Spirit of wine, of each 1½ ounce.
Mix.

(3) Sweating Embrocation for Windgalls, &c.

Strong mercurial ointment, 2 ozs.
Camphor, ½ ounce.
Oil of rosemary, 2 drachms.
Spirit of turpentine, 1 ounce. Mix.

(4) Another, but Stronger.

Strong mercurial ointment, 2 ozs.
Oil of bay, 1 ounce.
Oil of origanum, ½ ounce.
Powdered cantharides, ½ ounce.
Mix.

(5) A most Active Sweating Embrocation.

Red iodide of mercury, ½ to 1 drachm.
Powdered arnica leaves, 1 drachm.
Soap liniment, 2 ounces. Mix.

(6) This must be repeated until a blister is raised, which usually takes two or three applications. It may then be omitted for a week.

Sect. 15.—Emulsions.

Emulsions are very useful in the chronic cough of the horse; but are not successful with the dog.

(1) Simple Emulsion.

Linseed oil, 2 ounces.
Honey, 3 ounces.
Soft water, 1 pint.
Subcarbonate of potass, 1 drachm.

Dissolve the honey and potass in the water; then add the linseed oil by degrees in a large mortar, when it should assume a milky appearance. It may be given night and morning.

(2) Another more Active Emulsion.

Simple emulsion, No. 1, 8 ounces.
Camphor, 1 drachm.
Opium in powder, ½ drachm.
Oil of aniseed, 30 drops.

Rub the three last ingredients together in a mortar with some white sugar; then add the emulsion by degrees.

Sect. 16.—Emetics.

Emetics are not used in horse medicines, but are sometimes required for the dog, though not so often as is commonly supposed. Vomiting is a natural process in that animal, and seldom wants provoking; indeed, if emetics are often had recourse to, his stomach becomes so irritable that neither medicine nor food will remain on it. Hence, their administration should be carefully kept within the bounds of absolute necessity.

(1) Emetic to be Given to the Dog.

Tartar emetic, ½ to 1 grain.
Powdered ipecacuanha, 4 to 5 grs.
Mix, and dissolve in a little water, to be given as a drench; and to be followed by half a pint of lukewarm water in a quarter of an hour.

(2) Common Salt Emetic.

A teaspoonful of salt and half this quantity of mustard are to be dissolved in half a pint of warm water, and given as a drench.

Sect. 17.—Expectorants.

Expectorants excite or promote discharge of mucus from the lining membrane of the bronchial tubes, thereby relieving inflammation and allaying cough. They are equally useful in Dog and Horse.

Expectorants for the Dog:—

(1) Ipecacuanha powder, 1 to 1½ grain.
Powdered rhubarb, 1 to 3 grains.
Compound squill pill, 1 to 2 grains.
Powdered opium, ½ to 1 grain.
Linseed meal and water, enough to make a bolus, to be given night and morning.

(2) Ipecacuanha powder, and
Powdered opium, of each a grain.
Confection enough to make a pill, to be given every six hours.

(3) An Expectorant Mixture for Chronic Cough in the Dog.

Friar's balsam, 10 to 15 drops.
Syrup of poppies, 1 drachm.
Diluted sulphuric acid, 5 to 10 drops.
Mucilage, ½ ounce.
Water, ½ ounce.
Mix, and give two or three times a-day.

(4) An Expectorant in Recent Cough.

Tincture of lobelia, 10 to 15 drops.
Almond emulsion, 1 ounce.
Extract of conium, 2 to 3 grains.
Ipecacuanha wine, 5 to 10 drops.
Mix, and give two or three times a-day.

Expectorant Ball for the Horse:—

(5) In Ordinary Cough without Inflammation.

Gum ammoniacum, ½ ounce.
Powdered squill, 1 drachm.
Castile soap, 2 drachms.
Honey enough to form a ball.

(6) In Old Standing Cough (Stomach)

Assafœtida, 3 drachms.
Galbanum, 1 drachm.
Carbonate of ammonia, ½ drachm.
Ginger, 1½ drachm.
Honey enough to form a ball.

(7) A Strong Expectorant Ball.

Emetic tartar, ½ drachm.
Calomel 15 grains.
Digitalis, ½ drachm.
Powdered squill, ½ drachm.
Linseed meal and water enough to form a ball, which is not to be repeated without great care.

Sect. 18.—Febrifuges.

Fever Medicines are given to allay fever, which they do by increasing the secretions of urine and sweat, and also by reducing the action of the heart.

Febrifuges for the Dog.

(1) Calomel, 1 to 3 grains.
Digitalis, ½ grain.
Nitre, 3 to 5 grains.
Confection to form a pill, to be given every night.

(2) Nitre, 3 to 5 grains.
Tartar emetic, 1-6th grain.
Confection to form a pill, to be given night and morning.

(3) Fever Mixture for the Dog.

Nitre, 1 drachm.
Sweet spirit of nitre, 3 drachms.
Mindererus spirit, 1 ounce.
Camphor mixture, 6½ ounces.

Mix, and give two tablespoonfuls every six hours.

FEVER MEDICINES FOR THE HORSE :—

(4) FEVER BALL.

Nitre, 4 drachms.
Camphor, 1½ drachm.
Calomel and opium, of each 1 scruple.
Linseed meal and water enough to form a ball.

(5) ANOTHER FEVER BALL.

Emetic tartar, 1½ to 2 drachms.
Compound powder of tragacanth, 2 drachms.
Linseed meal as above.

(6) ANOTHER.

Nitre, 1 ounce.
Camphor, 2 drachms.
Mix as above.

(7) COOLING MASH.

Nitre, 1 ounce, may be given in a bran mash.

(8) COOLING DRENCH.

Nitre, 1 ounce.
Sweet spirit of nitre, 2 ounces.
Tincture of digitalis, 2 drachms.
Whey, 1 pint.

SECT. 19.—CLYSTERS.

CLYSTERS are intended either to relieve obstruction or spasm of the bowels, and are of great use both in the dog and horse.

FOR THE DOG, clysters should be simply a pint or two of warm water, in which soap has been dissolved, or the following :—

TURPENTINE CLYSTER IN COLIC.

(1) Spirit of turpentine, ½ ounce.
Castor-oil, 1 ounce.
Tincture of opium, 2 to 3 drachms.
Gruel, 1 pint.
Mix. Half of this is enough for a small dog.

CLYSTERS FOR THE HORSE may also in the general way be of warm water or gruel, of which some quarts will be required in colic. They should be thrown up with the proper syringe, provided with valves and a flexible tube.

(2) Turpentine clyster in colic, see Antispasmodics.

(3) Aperient clysters, see Aperients.

(4) ANODYNE CLYSTER IN DIARRHŒA.

Starch, made as for washing, 1 quart.
Powdered opium, 2 drachms.
The opium is to be boiled in water, and added to the starch.

SECT. 20.—LOTIONS.

LOTIONS are liquids applied to the external parts when inflamed, and they act by reducing the temperature, and by giving tone to the vessels of the part.

LOTIONS FOR THE DOG :—

(1) COOLING LOTION IN BRUISES OR CUTS.

Extract of lead, 1 drachm.
Tincture of arnica, ½ to 1 drachm.
Water, ½ pint.
Mix and apply constantly by means of a sponge.

(2) COOLING LOTION IN STIFFNESS FROM BRUISES OR WORK.

Tincture of arnica, 1 drachm.
Spirit of wine, 7 drachms.
Mix, and rub well into the part, before the fire, with the hand.

(3) LOTION FOR THE EYES.

Sulphate of zinc, 20 to 25 grains.
Water, 6 ounces. Mix.

(4) VERY STRONG ONE, AND ONLY TO BE DROPPED IN.

Nitrate of silver, 5 to 8 grains.
Distilled water, 1 ounce.
Mix, and use with a camel-hair brush.

(5) FOR INTERNAL CANKER.

Nitrate of silver, 10 grains.
Distilled water, 1 ounce.
Mix, and drop in every night.

LOTIONS FOR THE HORSE :—

(6) COOLING LOTION FOR EXTERNAL INFLAMMATION.

Goulard extract, 1 ounce.
Vinegar, 2 ounces.
Spirit of wine, or gin, 3 ounces.
Water, 1½ pint.
Mix, and apply with a calico bandage.

(7) ANOTHER, FOR INFLAMED LEGS, OR FOR GALLED SHOULDERS OR BACK.

Sal ammoniac, 1 ounce.
Vinegar, 4 ounces.
Spirit of wine, 2 ounces.

Tincture of arnica, 2 drachms.
Water, half a pint. Mix.

(8) Lotion for Foul Ulcers.

Sulphate of copper, 1 ounce.
Nitric acid, ½ ounce.
Water, 8 to 12 ounces. Mix.

Sect. 21.—Ointments.

Ointments are greasy applications, consisting of a powerful drug mixed with lard, or some similar compound, and thus applied to the sore; they are generally more properly described under the several heads for which they are used. (See Astringents, Anodynes, &c.) Sometimes, however, as in the case of mange, it is more convenient to give a receipt for one here.

Mange Ointment.

Iodide of mercury, 1 drachm.
Lard, 1 ounce. Mix.

Sect. 22.—Stimulants.

Stimulants.—By this term is understood those substances which excite the action of the whole nervous and vascular systems; almost all medicines are stimulants to some part or other, as, for instance, aperients, which stimulate the lining of the bowels, but to the general system are lowering. On the other hand, Stimulants, so called, excite and raise the action of the brain and heart. They act much in the same way on the dog and horse.

Stimulant for the Dog :—

(1) Stimulating Mixture.

Aromatic spirit of ammonia, 1 oz.
Tincture of cardamoms, 1 ounce.
Camphor mixture, 6 ounces.
Mix, and give two tablespoonfuls every six hours.

Stimulant for the Horse :—

(2) Old ale, 1 quart.
Carbonate of ammonia, ½ to 2 drs.
Tincture of ginger, 4 drachms.
Mix, and give as a drench.

(3) For other stimulants, see Cordials.

Sect. 23.—Stomachics.

Stomachics are medicines given to improve the tone of the stomach when impaired by bad management or disease.

Stomachics for the Dog :—

(1) Stomachic Bolus.

Extract of gentian, 6 to 8 grains.
Powdered rhubarb, 2 to 3 grains.
Mix, and give twice a day.

(2) Stomachic Mixture.

Tincture of cardamoms ½ to 1 oz.
Infusion of cascarilla, 7 ounces.
Carbonate of soda, ½ drachm.
Mix, and give two tablespoonfuls twice a day.

Stomachics for the Horse :—

(3) Stomachic Ball.

Powdered gentian ½ ounce.
Powdered ginger, 1½ drachm.
Carbonate of Soda, 1 drachm.
Treacle to form a ball.

(4) Another.

Cascarilla powdered, 1 ounce.
Myrrh, 1½ drachm.
Castile soap, 1 drachm.
Mix, with syrup or treacle, into a ball

(5) Another.

Powdered colombo, ½ to 1 ounce.
Powdered cassia, 1 drachm.
Powdered rhubarb, 2 drachms.
Mix as in No. 4.

Sect. 24.—Styptics.

Styptics are remedies which have a tendency to stop the flow of blood either from internal or external surfaces. They are used either by the mouth, or to the part itself in the shape of lotions, &c.; or the actual cautery, which is always the best in external bleeding.

Internal Styptics for the Dog :—

(1) For Bloody Urine, or Bleeding from the Lungs.

Superacetate of lead, 12 to 24 grains.
Tincture of matico, ½ to 1 ounce.
Vinegar, 2 drachms.
Water, 7 to 7½ ounces.
Mix, and give two tablespoonfuls two or three times a day to a full-sized dog.

(2) For the Horse, see Astringents.

Sect. 25.—Tonics.

Tonics augment the vigour of the whole body permanently, whilst stimulants only act for a short time. They are chiefly useful after low fever.

TONICS FOR THE DOG :—

(1) TONIC PILLS.

Sulphate of quinine, 1 to 3 grains.
Ginger, 2 to 3 grains.
Extract of gentian, enough to form a bolus, to be given twice a day.

(2) TONIC MIXTURE

Compound tincture of bark, 1 ounce.
Decoction of yellow bark, 7 ounces.
Mix, and give two tablespoonfuls twice or thrice a day.

TONICS FOR THE HORSE :—

(3) TONIC BALL.

Powdered yellow bark, 1 ounce.
Ginger, 2 drachms.
Carbonate of soda, ½ drachm.
Form into a ball with linseed meal and water.

(4) ANOTHER TONIC BALL.

Sulphate of iron, ½ ounce.
Extract of camomile, 1 ounce.
Mix, and form into a ball.

(5) ANOTHER TONIC BALL.

Arsenic, 10 grains.
Ginger, 1 drachm.
Powdered aniseed, 1 ounce.
Compound powder of tragacanth, 2 drachms.
Syrup enough to form a ball.
It is a very powerful tonic.

SECT. 26.—WORM MEDICINES.

WORM MEDICINES are given in order to expel worms, which they do partly from their specific action upon the worm itself, and partly by their purgative qualities, which all ought to possess, or to be followed by medicines of that class.

WORM MEDICINES FOR THE DOG :—

(1) FOR WORMS GENERALLY.

Two drachms of powdered areca nut. To be given mixed up in water as a drench, and followed by a dose of castor-oil. This is the dose for a large dog. It may be regulated for all sizes by giving two grains of the nut for each pound the dog weighs.

(2) WORM MEDICINES FOR ROUND WORM.

Indian pink, 1 ounce.
Boiling water, 8 ounces.
Let it stand for an hour, then strain and give from one-eighth to one-half on an empty stomach once a week. Castor-oil should be given next day This, however, sometimes produces serious mischief.

(3) FOR TAPE WORM.

Kousso, ¼ to ½ ounce.
Lemon juice, ½ ounce.
Mix, and give as a drench, with the addition of a little water, on an empty stomach. This should be followed by a dose of castor-oil eight hours after.

(4) FOR TAPE WORM (old plan).

Spirit of turpentine, 2 to 4 drachms.
To be tied firmly up in a piece of bladder, and given as a bolus, taking care not to break it.

(5) FOR TAPE WORM (another plan).

Root of male fern, 1 to 4 drachms.
Powdered jalap, 15 grains.
Liquorice powder or linseed meal enough to form a bolus with water.

For the more detailed description of the Remedies for Worms, see the sections on their treatment in the Diseases of the Dog and Horse.

WORM MEDICINES FOR THE HORSE :—

(6) Calomel, 1 to 2 drachms.
Barbadoes aloes, 3 to 6 drachms.
Ginger, 1 drachm.
Soap, 3 drachms. Mix.

(7) WORM DRENCH.

A pint of linseed oil every other day.

CHAPTER II.

MODE OF ADMINISTERING MEDICINES TO THE DOG.

MEDICINES are given to the dog either in the form of a powder, a bolus, or a drench. In the first of these (*ex. gr.*, areca nut), the drug must be mixed with some tasty substance, such as broth, when, the dog being hungry, he

will swallow it without difficulty; and as, prior to the administration of all vermifuges, fasting for twenty-four hours previously must be carried out strictly, there is less trouble than usual.

Calomel or grey-powder, which is tasteless, may be given wrapped up in a thin piece of meat, but in any other drugs it is better to make them up into pill or bolus. When it is desired to give either of these, it is only necessary, if a large dog, to back him into a corner, or if a small one, to hold him in the lap, then opening the mouth by pressing the cheeks against the molar teeth, the pill or bolus is dropped into the throat and pushed well down with the fore-finger; after which the mouth is closed, still holding the head up, and the act of swallowing must of necessity take place.

Drenching is carried out in a similar manner, as far as holding the dog is concerned; but it requires a towel to protect the hand, if the dog is strong and violent.

The remedies for the dog are nearly all similar to those used for similar diseases in the human subject; but the doses are not always in the same proportions. Thus opium is much less active in the dog than in man, while calomel and castor-oil are more so. It is necessary to be aware of these facts, or either under-dosing or over-dosing will be the result.

In horses the same remarks as to doses apply, arsenic being comparatively inert on that animal; but the treatment of their diseases is very different from that of man's.

CHAPTER III.

MODE OF ADMINISTERING REMEDIES TO THE HORSE.

The most Common Form in which medicine is given to the horse is by means of the ball—an oblong mass of rather soft consistence, yet tough enough to retain its shape, and wrapped up in thin paper for that purpose. The usual weight of balls is from half an ounce to an ounce; but they may be given of a larger size, if they are made longer but not wider. Every groom should know how to give a ball, which is managed either with or without a balling-iron—an instrument which is seldom wanted, and which sometimes occasions considerable mischief to the roof of the horse's mouth. Occasionally a horse cannot be managed by any other means; but generally speaking the instrument is only an excuse for bad management.

In Giving a Ball in the ordinary way, the horse's tongue is drawn out of the mouth on the off or right side, and held there firmly with the left hand grasping it as near the root as possible, but to a certain extent yielding to the movement of the horse's head, so as not absolutely to tear it out. While the tongue is thus held, the ball is placed between the fingers and thumb of the right hand, extending in a wedge-like or conical form so as to pass as far down the swallow as possible, and the hand in this form, with the arm bared to the shoulder, is carried over the root of the tongue till it feels the impediment caused by the contraction of the swallow, when the fingers leave the ball there, and the hand is withdrawn quickly yet smoothly, while at the same moment the tongue is released, and the head is held up till the ball is seen to pass down the gullet on the left side of the neck, after which the head may be released.

When the Balling-Iron is used, the oval ring of which it is composed is passed into the mouth, so as to keep it open, being first well guarded with tow or cloths wrapped round it; the handle is then held in the left hand, *together with the halter*, so as to steady the head, and yet to keep the horse from biting; and while thus held the hand can freely be carried over the tongue, and the ball be deposited in the pharynx. When a horse is very determined, it is sometimes necessary to keep the iron in the mouth by means of the cheek-pieces of an ordinary bridle buckled to the sides of the oval ring; but this expedient is seldom

required if the halter is firmly grasped with the handle of the iron. In the usual way the horse to be *balled* is turned round in his stall, which prevents his backing away from the groom; and if the latter is not tall enough, he may stand upon a *sound* stable-bucket turned upside down.

BALLS should be recently made, as they soon spoil by keeping; not only losing their strength, but also becoming so hard as to be almost insoluble in the stomach, and frequently passing through the bowels nearly as they went into the mouth. When hard, they are also liable to stick in the horse's gullet. If ammonia or any other strong stimulant is given in this way, the horse should not have his stomach quite empty, but should have a little gruel or water just before; for if this is put off till afterwards, the nauseous taste of the ball almost always prevents his drinking. When arsenic forms the principal ingredient of the ball, it should be given soon after a feed of corn; or a quart or two of gruel should be given instead, just before the ball.

THE ADMINISTRATION OF A DRENCH is a much more troublesome affair than the giving of a ball; and in almost all cases more or less of the dose is wasted. Sometimes, however, a liquid medicine is to be preferred, as in colic gripes, when the urgent nature of the symptoms demands a rapidly-acting remedy, which a ball, from its requiring time to dissolve, is not; and, besides this, a ball cannot contain any of the spirituous cordials.

The best instrument for giving a drench is the horn of the ox, cut obliquely, so as to form a spout. Bottles are sometimes used in an emergency, but their fragile nature always renders them dangerous. In giving a drench, the tongue is held in the same way as for the delivery of a ball, but the head must be more elevated; the drench is then carefully poured into the throat, after which the tongue is let go, but the head still kept up till it is all swallowed. Allowance should always be made for some waste in giving a drench.

PHYSICKING, or the giving of *opening* physic, is necessary in many diseases, which will be specified as they severally come under observation. The usual mode of managing all horses while "in physic" is that which I shall here describe. In all cases, if possible, the horse should be prepared by bran mashes, given for two or three nights, so as to make the bowels rather loose than otherwise, and thus allow the dose to act without undue forcing of the impacted fæces backwards. If physic is given without this softening process, the stomach and bowels pour out a large secretion of fluid, which is forced back upon the rectum, and met by a solid obstacle which it takes a long time to overcome, and during that interval the irritating purge is acting upon the lining membrane, and often produces excessive inflammation of it. Purging physic should generally be given in the middle of the day, after which the horse should remain in the stable, and have chilled water as often as he will drink it, with bran mashes. By the next morning he will be ready to be walked out for an hour, which will set the bowels to act if they have not already begun. It is usual to tie up the tail with a tape or string, so as to keep it clean. The horse should be warmly clothed, and if the physic does not act with an hour's walk he may be gently trotted for a short distance, and then taken home; and, if still obstinate, he may be exercised again in the afternoon. As soon as the physic operates pretty freely the horse is to be taken into his stable, *and not stirred out again, under any pretence whatever*, for forty-eight hours after it has "set," or, in common language, stopped acting. When the purging has ceased, the mashes may be continued for twenty-four hours, with a little corn added to them, and a moderate quantity of hay. The water, during the whole time, should be given in small quantities, and chilled; and the clothing should be rather warmer than usual, taking great care to avoid draughts of cold air. Every horse requires at least three days' rest for a dose of physic, in order to avoid risk of mischief.

THE MODE OF GIVING A CLYSTER is now rendered simple enough, because a pump and tube are expressly made for the purpose; and the groom has only to pass the greased end of the tube carefully into the rectum, for about eight or nine inches, and then pump the liquid up until a sufficient quantity is given. From a gallon to six quarts is the average quantity, but in colic a much larger amount is required.

Lotions are applied by means of calico bandages, if used to the legs; or by a piece of calico tied over the part if to any other surface.

Fomentations are very serviceable to the horse in all recent external inflammations, and it is astonishing what may be done by a careful groom, with warm water alone, and a good-sized sponge. Sometimes by means of an elastic tube and stop-cock warm water is conducted in a continuous stream over an inflamed part, as in severe wounds, &c., in which this plan is found wonderfully successful in allaying the irritation, which is so likely to occur in the nervous system of the horse. A vessel of warm water is placed above the level of the horse's back, and a small India-rubber tube leads from it to a sponge fixed above the part, from which the water runs to the ground as fast as it is over-filled. It is a plan very easily carried out by any person of ordinary ingenuity.

PART V.

DISEASES OF THE DOG AND HORSE.

BOOK III.—THE DISEASES OF THE DOG AND THEIR TREATMENT.

CHAPTER I.
FEVER.

Sect. 1.—Simple Ephemeral Fever.

In the Dog, simple fever is merely a condition in which there is first a chilliness, accompanied by actual increase of surface heat, and quick respiration and pulse; then loss of appetite and diminished secretion of urine, with frequently costive bowels; and finally, a tendency to congestion in the mucous membrane of the lungs and nostrils, or of some other internal organ, but generally of the lungs and nose, producing cough and running at the nose and eyes. The febrile symptoms usually run a short course, seldom going beyond three days, but the congestion of the mucous membrane often remains much longer.

The Cause is almost always exposure to cold, especially a draught of cold air on a heated skin, after exercise.

The Treatment will be as follows:—In the first place, complete rest should be accorded; next, a dose of aperient medicine, with calomel, in the following shape, will generally be advisable, as it will clear away any sources of irritation which may exist:—

Calomel, 2 to 4 grains.
Jalap in powder, 10 to 15 grains.
Ginger, 1 grain. Mix.

The dose will be in proportion to the size and strength of the dog, giving one-half or a quarter to a small one or to a young puppy. When this has operated, with the assistance of some gruel, very little more will be necessary under ordinary circumstances, and in a few days the dog will be well.

Sect. 2.—Simple Epidemic Fever, or Influenza.

This species of fever is closely allied to the preceding variety in everything but the cause, which, instead of being exposure to cold, is some peculiar condition of the air, to which the name epidemic is given, in order to conceal our ignorance, for it is really only giving a name and nothing else. The term influenza is precisely similar, both only signifying the peculiar and general prevalence of the complaint, and not defining its nature or its cause. The latter term is, however, applied more especially to epidemic catarrh, which is the form we are now considering. As the symptoms are very closely similar to those of simple cold, or ephemeral fever, it is unnecessary to repeat them; nor is the treatment in the first stage at all different. But as the cough and running seldom disappear without some extra care and attention, it does not always do to trust to nature here for a cure. Lowering medicines and diet after the first few days are not at all successful; and, on the other hand, warm expectorants, with tolerably-good and nourishing slops, will be found to answer the best. The Expectorant Bolus, No. 1, may be given night and morning with advantage, and a Stimulating Embrocation, No. 1, applied to the side night and morning with the hand. As soon as the cough and running at the nose have somewhat subsided, and before exercise is allowed, the bark mixture (Tonic No. 2) may be given; and only when the strength and spirits are so recruited as to warrant the supposition that the health is greatly restored is the dog to be allowed exercise, and then only at first with great caution. It is often the case that a premature exposure to air and excitement brings on a relapse, and especially when the lungs are at all implicated either in their substance or mucous membrane. A human patient can be taken out in a carriage, but dogs, unless they are great pets, are seldom allowed that indulgence; and hence the necessity for the above precaution.

SECT. 3.—TYPHUS FEVER OR DISTEMPER.

In a series of letters on this subject I entered at great length into the nature of "distemper," as it is called, in order to show its exact similarity to typhus fever; and in that opinion I am more than ever settled with enlarged time and opportunity of observation. It is extraordinary what a difference there is among observers; for Mr. Mayhew came to the conclusion that it is doubtful whether it is contagious or not; and that all dogs, whether starved or taken care of, are equally its victims. Now, in this opinion I believe he will be at variance with ninety-nine out of a hundred of those who have had to do with dogs, and I am decidedly of opinion that he is wrong in both suppositions. But leaving out of view all the arguments *pro* and *con.* which I have heretofore inflicted upon my readers, I will proceed to describe what I believe to be the essence of the disease, and its best mode of treatment, which is what the sportsman chiefly cares about, and in which there is very little difference in principle between the plans advocated by Mr. Mayhew and my own, which were, however promulgated long before his volume saw the light.

THE ESSENCE OF THE DISEASE is a depraved or poisoned condition of the blood, which may arise spontaneously or be produced by contagion. When it arises from contagion, the disease is clearly distemper from the first; but when arising spontaneously, it often supervenes upon other diseases, such as common or epidemic catarrh, &c.; and then it is not at once clear in the early stage whether it may assume the character of distemper or not. No other disease prostrates the system so rapidly, nor does any other produce such rapid emaciation—both arising from the action of a poison in the blood, by which the nervous system is affected, and the solid matter of the muscles rapidly broken down. It appears to me that in the genuine distemper all the secretions are vitiated in quality, or diminished in quantity, so that the urine is high-coloured and scanty; the bowels are costive or loose, and their discharges of a peculiarly offensive character; and the mucous membranes of the eyes, nose, and lungs pour out a thick viscid and yellow mucus. The bile, if any is secreted, is black and scanty; and the saliva is absent, with a thick black formation of "sordes" about the mouth in its place. Since, therefore, those which are altered are not nearly all *mucous* secretions, but of different glands, it can scarcely be said to be a fever of mucous membranes alone, but rather a fever implicating all the secretions of the body, and also the organs of nutrition, so that the body is neither properly depurated nor supported whilst it exists.

THE SYMPTOMS are very various, as may be expected, considering the nature of the disease; and that it may either arise from contagion or in consequence of the attack of other diseases. They may, however, mainly be summed up as consisting of two sets—first, the invariable symptoms; and secondly, the occasional ones. The invariable symptoms are low insidious fever, excessive prostration, and rapid emaciation, both much greater than any other similar disease will produce; so that it is very common to find a dog which is in tolerable health, though perhaps ailing slightly, quite unable to stand in three days, and wasted to a skeleton. These symptoms often occur without purging, or any apparent cause except the fever; and when they come on, even where there is no running at the eyes and nose, or cough, or other local complication, the disease is clearly distemper; and there is great danger, from the general poisoning of the blood and the great loss of strength attending upon it, in consequence of the want of depuration and nutrition. The appetite is also almost always bad, and food must be given by force in most cases in order to support the powers. The accidental symptoms are connected with the various complications which occur in this protean complaint, and depend upon the organ or organs which are the seat of the congestion or inflammation. Thus, if the lungs are attacked, there is evidence of congestion of the lungs; if the bowels are the seat of complication, they show it by the signs peculiar to that disease, and so on; and in each case attention must be paid to the peculiar complication in order to combat it by appropriate remedies.

THE USUAL COURSE OF DISTEMPER, when contracted by contagion, or when epidemic, as it sometimes clearly is, may be described as follows:—The

first thing observed is a peculiar dulness of the eyes, with a general lassitude, and indisposition either to play or work, but not of such a character as to mark anything but an ordinary cold, or other slight ailment. But usually accompanying this there is a peculiar cough, which comes on without anything apparently to cause it, and generally between a cough and a sneeze, so that the dog stands and coughs and sneezes, or sneezes and coughs, for five minutes at a time, as soon as he is taken out, but is free from it in the kennel; and it is only when the blood is driven through the mucous membrane more rapidly than usual that this condition is produced. But though this is easily detected by the practised ear (because the character is less bold and decided than in ordinary or epidemic cough or catarrh), yet to the uninitiated it is not so clear, and this symptom alone will seldom lead to any decided knowledge of what is to come. If, however, it has made its appearance at a time when there has been no exposure to cold or wet, and especially in a puppy, either at six months old, when teething, or in the following spring, when shedding the coat, it is a very suspicious symptom at all times. But when a dog with this sneezing at once loses his appetite entirely, *without being sick*, and at the same time almost entirely loses his strength and flesh in a few days, it may safely be inferred that the distemper is coming on, unless there is some other disease apparent, such as violent inflammation of the lungs, liver, or bowels. With this condition of the general system, and of the nose and throat, there is almost always a discharge of black and pitchy fæces, scanty in quantity, unless diarrhœa comes on, but very offensive. The water is high-coloured, and the dog is chilly and disinclined to leave his kennel. The eyes are congested, and somewhat irritable on exposure to a strong light; they are generally more or less glued up with mucus, and this is sometimes to such an extent as to run down the face in a long pearly drop. The nose also is either dry and hot, or cool and discharging a thick mucus, often tinged with blood; and sometimes there is a frothy expectoration from the first. After a time the mouth becomes loaded with brown fur, called "sordes." The respiration is very quick, and the pulse is either quick, yet without power, or sometimes so slow as to be even below the number of respirations, which is a state I have never seen except in distemper.

It usually runs a course of from three to six weeks, and may be considered as divided into four periods; first, the period of incubation, called *incipient;* secondly, the period of *reaction*, in which the various complications make their appearance; thirdly, the period of *prostration*, marking its true typhoid nature; and, fourthly, the period of *convalescence*. When distemper supervenes upon other diseases, its early symptoms are not developed, and neither the *incipient* stage nor the stage of *reaction* is indicated; but after the usual progress of an attack of common catarrh, or of ordinary inflammation of the lungs, the *typhoid* stage is manifested, and the dog may be said to have true distemper, and in common language it is so described.

1. Head Complication.—Besides the general symptoms enumerated above, there is sometimes an evident torpor of the brain, with a fit occurring early in the attack, marking congestion of that vital organ. The eyes are generally deeply injected with dark blue blood when this is the case; and there may, or may not, be at the same time congestion of the mucous membrane of the nose, eyes, and lungs, which usually occur together. This complication of the head is the worst which can occur, except perhaps violent diarrhœa; but it is even more unmanageable than that. A second or third fit generally takes the dog off at once; or, if he lives through this stage, he becomes a confirmed cripple, from *choeea*, which generally supervenes upon this complication.

2. Bronchial Complication is by far the most common, and it is also the most under control. In it there is generally an excessive running from the eyes and nose, together with violent cough, quick breathing, and sometimes, though not often, actual inflammation of the lungs.

3. The Bowels are often the seat of a complication, and when this is the case there is generally present at first a violent purging of black pitchy fluid, followed by watery and offensive motions, and patches of lymph or whitish skin mixed with them. After

a time blood makes its appearance in streaks, and then in large quantities, and if this is not checked, the dog rapidly sinks and dies from exhaustion.

4. The Skin is attacked by a crop of large and small pustules, or blebs, filled with matter, often tinged with purple blood. This is a good sign, and indicates that the disease is expending itself upon an organ not directly implicating life.

Distemper may easily be confounded with those simple inflammations which attack the same organs; thus, inflammation (evidenced by a form of madness), ordinary bronchitis, or diarrhœa, may all be readily mistaken for it, but the distinction consists in the *low* fever, the prostration and the rapid emaciation, which are all *much* less marked in the above diseases. Whenever a simple inflammation attacks any of these organs there is *high fever*, with greatly increased heat of the nose and legs; bounding and quick pulse, and very rapid breathing, amounting to panting in bronchitis, pleurisy, and pneumonia, or with a refusal to lie down; but on the contrary, in distemper, the nose and legs are generally cold after the first stage; the fever is low, and the breathing, though quick, is not panting, nor is the pulse hard or greatly accelerated, often being below the frequency of the respirations.

The Treatment will depend much upon the stage of the disease. The grand principle in the first two of the periods, mentioned in page 858, is to hold the hand and wait for symptoms; it is far better to do nothing than to do harm, and if there is no occasion for medicine it should not be given. If, however, the bowels are confined, or if the motions are black and offensive, a calomel and jalap purge, No. 2, may be given, and it may be followed up by small doses of rhubarb and ipecacuanha, consisting of 2 or 3 grains of the former, and ½ a grain of the latter, two or three times a day, diminishing the dose according to the size of the dog. If this produces a good colour in the evacuations it may be stopped and nature suffered to take her course, with the aid of a little nitre in the water, in the proportion of 10 grains to the pint, which will not be rejected by the thirsty dog. When reaction sets in, the treatment must depend upon the organ attacked, always remembering that in distemper active measures are not borne with impunity, and that bleeding and severe purging will almost inevitably kill. If the head is the seat of complication, counter-irritation is the only means of affording relief; and the best mode of effecting it is to pass a large seton through the neck with a red-hot skewer, which does not give the pain which might be imagined. The seton should afterwards be dressed with mild blister-ointment, No. 1, rubbed into the tape every day. With this may be given, after the calomel and jalap purge, a mixture as follows:—

Nitre, ½ drachm.
Sweets spirit of nitre, 2 drachms.
Tincture of henbane, 2 drachms.
Tincture of colchicum, 1 drachm.
Camphor mixture, 6 ounces.

Mix, and give one-sixth three times a day. The eyes may always be allowed to take their own course.

If the lungs are the seat of complication, the expectorant bolus, No. 1 or 2, may be given three times a day; and, if very violent, the embrocation, No. 1, applied to the chest every night. For the bowels when relaxed, anodyne applications are needful, and one or other of those given in the list of anodynes will be likely to be useful; beginning with those first mentioned, and using rice and rice-water or arrowroot as food, and *nothing else*.

In the stage of prostration which comes on immediately the stage of reaction begins to decline, strengthening food and tonics must be liberally given, consisting of bark and wine with arrowroot or beef-tea. The bark is to be given in the shape of decoction of the yellow bark, one ounce, with a teaspoonful of Huxham's tincture of bark; and if the dog is very low and weak, 30 drops of aromatic spirit of ammonia. This dose should be given three times a day, and it will often succeed in restoring an apparently hopeless case. In one case which occurred at the Knightsbridge barracks during the summer of 1856, a very handsome young greyhound bitch was actually drawn out of her bed, being supposed to be dead, and was ordered to be buried: but, giving a groan or a gasp, her master ordered her to be liberally supplied with this medicine, and she gradually recovered.

In the *convalescent* period the great

danger is of a relapse from too early exercise. It is a long time before the heart recovers itself so as to be fit for exertion; and yet the dog's spirits are often so buoyant after a long confinement as to lead him to gallop and play about in a way which soon leads to a second attack of the same character as the first, and with the additional complication of a prostrated and debilitated constitution. No dog after distemper should be taken out without a leading-strap, and he should only be walked for half a mile or so at first till he gets strength enough to bear more. By this precaution few relapses occur; and in most cases, with ordinary prudence, if a dog lives over the first fortnight he will recover, if attention is paid to his diet and medicine. The latter I have already alluded to, and now I shall speak of the former.

The Diet, which is even more important than medicine in the early or incipient stage, should be very light, such as oatmeal porridge flavoured with milk or mutton broth. If diarrhœa comes on, rice-water should be allowed as the sole drink, and well-boiled rice given as food, flavoured with milk. This diet is to be continued until the typhoid stage comes on, when strong beef-tea, arrowroot, and port wine, or boiled rice with a little brandy in it, should be given, and, if necessary, forced upon the dog by drenching him with a spoon. This treatment will often be necessary until the *convalescent* stage is fully established, when the appetite returns, and the dog feeds as usual; but it will be a long time before his stomach is strong enough to bear solid food.

Warm Clothing is of the greatest consequence throughout the progress of the distemper, if the attack comes on during cold weather. Plenty of fresh air must be always given, but from it the body should be protected by a soft but warm cloth, kept on night and day, and plenty of clean straw, which should be changed at least twice a week. The kennel ought also to be kept scrupulously clean, and should be constantly swept out, though washing in very cold weather is not to be practised.

Summary of Distemper.—The essence of the disease is *low* fever, of typhoid character. The secret of successful treatment is not to do too much in the *first* stage, but simply to correct the torpid condition of the liver; in the *second*, to combat symptoms as they arise, by as mild treatment as will control them; and in the *third*, to support the strength by tonics and plenty of nourishing food;—whilst a relapse is to be guarded against by carefully keeping the dog to his kennel till quite strong again. Such is the treatment which I have found so successful that I would engage to cure 99 out of every 100 dogs attacked by distemper, if previously healthy, and supposing the attack to be of the ordinary type. The malignant form is, however, not so amenable to treatment; indeed, in some epidemics it is almost incurable, whatever may be the treatment adopted. The head complication is also very fatal, there not being time for remedies to act before fatal mischief occurs.

Worms are a fertile source of danger in distemper; and on that account, when they are present in puppies, they should be carefully removed by medicine. After distemper has set in, the administration of worm medicine in itself is almost sure to produce death, as it reduces the strength to a degree which greatly interferes with recovery.

Upon other Remedies and Preventives no reliance whatever is to be placed, whether they are Mr. Temple's castor-oil treatment—which is as old as the hills—or vaccination, or any of the numberless quack cures which have been promulgated at various times. By preserving the health, distemper may be averted entirely in many cases, or, if not wholly, yet the attack is rendered mild. So far, castor-oil as a means of preserving health may be efficacious; and in the early or incipient stage it is useful, in a single dose, or even, perhaps, if repeated twice during the first week or ten days. But in the true typhoid stage, castor-oil is highly objectionable, unless the bowels are costive; and if given during diarrhœa it would aggravate the disease tenfold, especially if without laudanum, which might serve to guard against its injurious tendencies. The fact is, that distemper cannot be treated upon any one plan, but must be managed according to the nature and stage of its development; and he will succeed the best who so regulates his treatment.

Sect. 4.—Rheumatic Fever.

Rheumatic Fever, or acute rheumatism, is a very common disease in the dog, though not very generally attended to or described by writers on its complaints. It arises from exposure to cold, when the dog has been overfed and rendered unfit to bear its attacks upon a system full of inflammatory matter. The pampered pet is the most liable; but greyhounds and pointers which are highly fed, and sometimes not sufficiently exercised, are also very liable to its approaches. In the dog, rheumatism is either confined to the muscular system or to the coverings of the spinal marrow, which sometimes take on the rheumatic inflammation to such an extent as to cause paralysis of the hind-legs. General rheumatic fever, or acute rheumatism, is characterized by intense soreness of the surface, so that the dog shrinks on the approach of the hand, from fear of being touched. He will almost always retire to some corner, and refuse to leave it on being called by his owner; and if brought out by force, he will stand and snarl at every hand. When the rheumatism is confined to the fore-quarter, it is called

Kennel Lameness, or Chest-Founder, which is the great bugbear of the fox-hound kennel, and is produced in them from cold, after the extraordinary fatigues which they undergo. When an animal is worn down by long-continued exhaustion, and is then placed to lie in a damp or cold kennel, he is almost sure to contract rheumatism, especially if he is fed upon stimulating food, which most hounds are, in order to enable them to bear their labours. Thus, overwork and no work at all alike engender the disease, but in a very opposite state—the former producing an active fever of a rheumatic character, whilst the latter brings on a more chronic and low kind, attended with great muscular stiffness, but not with high fever.

Paralysis, or loss of power (improperly so called), in the hinder extremities is another result of the low kind of rheumatic fever which comes on from long-continued high feeding followed by cold; and it is exactly of the same character as chest-founder, but confined to the hinder limbs instead of the shoulders. I have said that it is improperly called paralysis, and my reason for this is, that it is not at all analogous to other forms of paralysis, though there is temporary loss of power; but so there is in all rheumatic conditions; yet who would say that the poor rheumatic subject, who can neither move hand nor foot, is suffering from paralysis? Assuredly no one would who understands the nomenclature of disease. The essence of paralysis is considered to be loss of power *from disease in the nervous system*; hence, when the loss is dependent upon want of tone in the muscles affected, it is clearly a misnomer to apply the term *paralysis*.

Summary of Rheumatic Affections.—Under the head, therefore, of these affections are included—first general rheumatic fever, attended with marked general soreness and great constitutional disturbance; secondly, rheumatism of the fore-quarter, called kennel lameness or chest-founder; and thirdly, rheumatism of the hind-quarter, commonly, but improperly, called paralysis of the hind extremities—both attended by pain and loss of power, which latter is chiefly occasioned by fear of pain in the quarter attacked.

The Treatment of general rheumatism is partly constitutional and partly local. Begin by giving a smart purge, according to the condition and size of the dog, and usually adding some calomel to it—for directions to do which see Aperients in chapter on drugs. After this has acted, give the following pill, or half of it, according to the size of the dog, three times a day until the pain has abated:—

Calomel, and
Powdered opium, of each, 1 grain.
Colchicum powder, 2 grains.
Syrup to form a pill.

When the pain is gone, if the bowels are not very relaxed, give a dose of castor-oil; and during the whole continuance of the pain use the warm anodyne embrocation, No. 1 of Embrocations. This will act still better if the dog is first put into a hot bath at 100 degrees of Fahrenheit, then dried well by a good fire, and afterwards the liniment rubbed into the parts which are most full of pain.

For the more chronic forms, called kennel lameness and paralysis of the hind-quarter the warm-bath and lini-

ment may be used with the aperients, as above; but instead of the calomel and opium, give one or two tablespoonfuls of the following mixture twice a day:—

Iodide of potassium, 1 drachm.
Sweet spirit of nitre, 2 drachms.
Nitre, 1½ drachm.
Camphor mixture, 6 ounces. Mix.

What is called the "red-herring remedy" is said to be very efficacious, but I have never myself found it successful, though I have tried it several times; it is as follows:—Take a red-herring, score it with a knife, and well rub in two drachms of nitre; give this every morning on an empty stomach, and let the dog be kept fasting for two hours afterwards; at night, give him one drachm of camphor, made into a ball. If there is any difficulty in getting the dog to eat the herring, it may be mixed with a little broth and meal.

Another remedy, but containing the same chemical properties as the red-herring, is thus spoken of by Dr. Richardson, the owner of the celebrated greyhound, King Death:—"Having found the employment of trimethylamine very useful in human rheumatism, I imagined it might be equally efficacious in kennel lameness, and determined to try it in the first case I heard of. A friend lately had two pointers afflicted with this malady, one much more severely than the other; and I requested to be allowed to treat them. To the worst case four drops of trimethylamine were administered in milk thrice daily, and in four days the dog was entirely cured. The usual remedy of salt herring and camphor was given to the slighter case, and it did not recover for twelve days. Trimethylamine is extracted from herring bones, and seems to be merely a more powerful preparation of an old remedial agent, and its dose can be more readily adapted to each particular case. It is manufactured by Messrs. Perris, Borras, Townsend, and Boucher, wholesale druggists, Bristol."

THE DIET in each case should be low, all animal food should be taken away, and the dog fed upon meal or rice, according to the state of the bowels. It is a disease in great measure the result of too stimulating a food, and a withdrawal of meat will go far towards a cure, which, however, is seldom of long continuance when the disease has become chronic. Chest-founder is especially obstinate, and is seldom entirely recovered from in those dogs which are most exposed to its attacks, and most injured by them, namely, fox-hounds, harriers, and greyhounds.

SECT. 5.—SMALL-POX.

SMALL-POX is described by Mr. Youatt as attacking the dog, but I have never seen a case, or known any one who has. I must therefore refer my readers to Mr. Youatt's book for particulars, if they should have any doubt about the matter. Vaccination undoubtedly succeeds in the dog; and, reasoning from analogy, we should therefore expect small-pox to take a similar course and to attack the dog just as it attacks the human subject. If it does, however, it is extremely rare; and it is therefore scarcely worth while to take up space in its description, in a book intended rather for the information of the sportsman than for the scientific inquirer.

SECT. 6.—SYMPATHETIC FEVER.

BY SYMPATHETIC FEVER is to be understood, a fever which comes on as a consequence or precursor of some local inflammation or injury, causing great mischief to the body. Thus we have, prior to the actual appearance of inflammation of the lungs, a shivering, followed by increased action of the heart, with heat and generally diminished secretions; but this fever is not attended with the peculiar effects of distemper fever, and the dog suffering under it has strength enough to get about after many days of its continuance. In severe injuries there is the same kind of fever following them after the interval of a few hours; and here the action of the heart and the heat of surface are generally greater than in other fevers, except when the shock has been too great to allow of reaction.

THE TREATMENT of these secondary or sympathetic fevers is always subordinate to that of the inflammation or injury which caused them; and therefore it need not be entered upon here, since whatever relieves the cause will allay the effect.

CHAPTER II.

INFLAMMATIONS.

Sect. 1.—Of the Brain and Nervous System.

Babies, or Canine Madness, is in all human probability an inflammatory condition of the large nervous masses contained in the skull and spinal column. It is difficult to prove this, because our knowledge of the effects produced upon nervous matter by disease is very limited, and therefore we can neither say in rabies certain effects are produced, inasmuch as the eye cannot detect them, nor can we affirm, because we do not see any change, that there is none produced; but, reasoning analogically, there is no reason to doubt that the disease is essentially one of the nervous system; and, as all other structures when diseased receive and retain the impress of that state, and in rabies no such change in any of them is remarked on dissection, it is a strong argument in favour of placing the seat of it in a set of organs which we know are usually attacked without leaving any sign.

The Symptoms of canine madness are very much the same in all cases, though varying somewhat in their manifestations. The first and most marked is a change of disposition and temper, so that the naturally good-tempered dog becomes morose and snappish, and those which are usually fondling in their manners are shy and retiring. Sometimes the change is even so great that the usually shy dog becomes bold; but this is not nearly so common as the opposite extreme. Generally the mad dog shows a warning of his coming disease by this change of manner for several days before it breaks out with severity; though I have seen one well-marked attack which began and ended in death within forty-eight hours. This was in a Newfoundland dog, which I bought in perfect health to all appearance, and tied up in order to accustom him to his new master for a week or ten days, feeding him myself at the end of the first twenty-four hours, and observing no change from the usual habits of a strange dog. On the evening of the tenth day, however, after he had appeared in very good spirits, and eaten his dinner from my hand in the morning, he began to show signs of bad temper, and exhibited that peculiar snapping at imaginary objects well described by Mr. Youatt. On the next day he was in a highly rabid state, and died in the night after.

When these premonitory symptoms have lasted an uncertain time, varying from twenty-four hours to three or four days, the dog begins to attack imaginary objects, and if real ones are presented to him he will tear them savagely to pieces. He now is exceedingly irritable, and wanders restlessly from place to place, having apparently a strong desire to do something, but not caring what that is, so that he is not quiet. If he is confined by a chain he will try and gnaw it to pieces; and if restrained by a door within narrow bounds he vents his fury upon that. In this state he knows not the sensation of ordinary pain, but will bite a red-hot poker presented to him exactly as if it were a cold one. As the disease advances water is eagerly swallowed, but in his hurry the dog will generally upset his stock of that fluid; and hence he is often thought to be unable to swallow, whilst all the time he is burnt up with thirst, and will constantly imbibe it, if he can do so without knocking over the vessel containing it in his haste. The howls and groans are generally peculiarly deep and melancholy, and by them a mad dog *in confinement* may often be recognised, though sometimes the dog is quite silent, and in that state is said, in common language, to be "dumb mad."

When at large, however, no warning noise is made, and the dog seems only determined on a straightforward trot, which is slow and measured. If he is interfered with in any way, and more especially if he is struck, he will wreak his vengeance on the offender; but he seldom goes out of his way to do mischief, and will often pass through crowds of people without biting them; even if pursued and annoyed by cries and hootings, he takes no notice until he is injured, and then more frequently

endeavours to escape into solitude than turn upon his assailants. This desire to wander appears to me an instinctive attempt to get rid of the disease by muscular action, and if indulged in quietly, I am inclined to think that there might be some chance of a recovery; but as it would not be wise to run the risk, the experiment can never be tried.

The disease is evidently caused by some poison, and, as in other cases poisons are got rid of by some extraordinary secretion, so I am led to believe that the wearing down of the muscular, and with it the nervous system, by long-continued fatigue is the natural cure of the disease. If I had the disease myself, or had a case in which I could try the experiment with a chance of carrying out the plan, I would certainly see what could be done; and, as there is no other plan which offers the slightest chance of cure, it would at all events be as good as any other. If, in the early stage, an individual would start off, accompanied by an attendant on horseback, or by a relay of attendants, and walk till he could walk no longer, and then lie down to sleep, to be followed by a repetition of the walking until sleep was again produced, I believe that *some* chance of a cure might be afforded; but it would require great courage to carry the plan out, and very careful superintendence to encourage the patient during its progress. There are cases on record in which poor patients have travelled many miles to the sea in order to be dipped, and have been said to have been cured; whether from the dipping, or from the walking, it is doubtful, but it is possible that, if my view is correct, the long walk, prompted by a prospect of a cure at the end, may really have acted beneficially, and the disease, which invariably proves fatal when treated in a confined room, may have yielded to the fatigue incurred in reaching the sea-shore. As I said before, the experiment is worth trying; and I should much like to see it properly carried out. Numberless specifics have been paraded, and supported by repeated cures, including the Birling remedy, but there is not the least ground for belief in any one of them.

PREVENTIVE MEASURES are the only ones of service in this complaint, which, if fully established, has hitherto been uniformly fatal in all animals attacked by it, including man himself. When a bite has taken place, the best plan is to destroy the animal at once; for though excision *may most probably* prevent the occurrence of the disease, no risk should be run. In man, immediate excision, followed by a pointed piece of lunar caustic pushed to the bottom of the wound, or nitric acid, should always be had recourse to, previously taking care to suck the wound, *with a mouth free from ulcers*, to discover which put a little salt in the mouth, when it will by its smarting show their existence, if there are any. It is supposed by some that confinement is the cause of the disease; and I am strongly inclined to believe that such is the case, as in those countries where dogs are suffered to be at large rabies is an unknown disease.

TETANUS is a disease very similar in its nature to rabies, but manifesting itself in spasms of the muscles rather than in general irritability of them. I have, however, only seen one case in the dog, which was the result of a severe injury, and it is said to be very rare indeed. No remedy seems to exert any power over it any more than over rabies itself. Chloroform, by inhalation, might be tried; but I can scarcely expect any good result in the dog, when its effects on the human being are so far from satisfactory.

TURNSIDE appears to be an inflammation of one side of the brain only, producing a tendency to turn round in a circle, like "the gidd" of sheep. It is rather a rare disease, and is easily recognised by the above characteristic sign. There is no apparent constitutional disturbance, and the dog eats much as usual; but the moment he attempts to walk he begins to turn round. In a case which I saw some years ago, the dog recovered by the use of a seton, with purgatives, followed by nitrate of silver, given three times a day in a pill, as follows:—

Nitrate of silver, carefully powdered, 2 grains.
Crumb of bread, enough to make 8 pills.

SECT. 2.—INFLAMMATION OF THE ORGANS OF SENSE.

THE EYE is the seat of various inflammations, coming on from causes

totally distinct from one another. Thus, in distemper, there is generally an inflammation, with discharge, and sometimes the inexperienced attendant will fear that the eye will be lost; but if the dog recovers his strength, the eye, in almost all cases, is restored also, and especially if it is not interfered with. If, on the other hand, an attempt is made to apply remedies, with the intention of saving the sight, the effect is the reverse of good, and the disease is aggravated so far as often to cause the ulceration to extend through the cornea, and destroy the eye.

In Ordinary Ophthalmia, arising from cold, there is considerable injection of the vessels of the white of the eye, which become red and swollen. In this kind, if an ulcer appears it will often eat through the cornea, and the eye will be lost by a discharge of its contents. Sometimes, again, in a weakly young dog, there is a low kind of inflammation, with great intolerance of light, and a discharge of watery fluid instead of thick pus. This is *strumous* ophthalmia, and requires a very different treatment. A third kind of ophthalmia, the *rheumatic*, is unattended by discharge; the vessels are deeply gorged and the pain great. This, however, is a disease peculiar to old dogs, and from that cause may generally be distinguished from the strumous, and from the ordinary ophthalmia, by the absence of discharge. There is also an inflammation, the result of accident, which sometimes destroys the eye rapidly, and requires energetic treatment.

The Treatment of Ordinary Ophthalmia should depend upon its severity, which, if great, will demand bleeding and strong purgatives, followed by a grain of calomel and opium two or three times a day. When an ulcer appears a wash should be used daily, consisting of the nitrate of silver in solution, or the sulphate of zinc, according to the formulas given under Eye-washes. In the strumous kind tonics are necessary, consisting of 1 grain of quinine and 3 of hemlock, in a pill, three times a day. When the rheumatic form shows itself, a brisk purge must first be given, and then the iodide of potassium should be administered according to the formula at page 849. If this does not succeed, a seton may be inserted in the neck.

Cataract consists in an opacity of the crystalline lens, for which nothing can be done; for although it might be removed by operation, the dog would still be unable to see for want of the glasses which in the human subject supply its place. It may easily be recognised by the clear white pupil, which takes the place of the ordinary dark centre of the organ.

Dropsy of the Eye is only the result of chronic inflammation, and little can be done to alleviate it, as the eye is almost always destroyed before the disease proceeds so far as to cause dropsy.

Amaurosis, or paralysis of the nerve, is generally a sign of disease of the brain, either produced by injury or from over-feeding. The dog is more or less blind without the eye showing any change in form, and even at first being preternaturally bright. But if the dog is watched, he is seen to be blind by his striking his head against objects in his way, and by his timid mode of moving about. If the disease is recent, the dog may possibly be cured by smart purgatives and a seton; but, in most cases, very little benefit is experienced from these remedies.

Deafness is often congenital, and when such is the case, no remedies are of any avail. If it comes on after distemper, it will generally disappear, or if it occurs from ordinary cold. Whenever it is obstinately persistent for more than a fortnight, a seton in the neck is the best remedy, kept in for some weeks.

Canker of the Ear is rather an eruption than a disease of the ear; but as it is generally confined to that organ, it may be as well to allude to it in this place. It is usually described as of two kinds, an external and an internal canker; but both are caused by an eruption, which first makes its appearance in the interior and then extends to the outer ear, in consequence partly of the irritation of the discharge, and partly of the constant shaking of the head, caused by the itching produced by the eruption. It is always the result of high-feeding and confinement, which produce an itchy and watery discharge on the body generally, and in the ear in particular; and the discharge itself is of such a character that it excoriates the adjacent parts, and thus propagates the

eruption. Dogs are rendered half mad by the constant irritation, and go on shaking their heads all day and half the night in their attempts to mitigate the evil. The ends of the ears almost always suffer the most, but little attention need be paid to these parts, because if the internal ear is cured, the external rapidly gets well; nevertheless, it is a very good plan to apply a cap, not to cure the external ear, but to make the dog keep his head quiet; for he will not shake it if he finds no benefit, in consequence of the ears being confined by the cap. Pointers and setters are peculiarly liable to the disease, because they are almost always confined to their kennels during the months in which their services in the field are not required.

THE TREATMENT OF CANKER consists in the use of a lotion of nitrate of silver, 10 grains to the ounce of water, poured into the ears, after muzzling the dog, or applying the ointment of green iodide of mercury, mixed with an equal quantity of oil, and smeared on a piece of cotton wool, which should be pushed into the passage; and of purgatives two or three times a week for two or three weeks, with oatmeal porridge, flavoured only with a little weak broth, no flesh whatever, and green vegetables, well boiled, mixed in, twice or thrice a week. If this does not effect a cure in a few weeks, give liquor arsenicalis three times a day *with the food*, in a dose, varying according to the size, from 1 to 7 drops. This should be continued for some time, but it must be carefully watched, as its effects are sometimes serious. It produces great redness of the eyes, and loss of appetite after a time; and when these symptoms appear the dose is immediately to be reduced one-half, but not discontinued altogether, as they only mark the proper effect which was desired; but if fits come on it must be left off altogether.

BLAIN is a vesicular eruption occurring in the mouth, but I have never yet seen a case. Mr. Youatt advises the application of a solution of chloride of lime after opening the vesicles, and I have little doubt that this is the appropriate remedy.

THE TEETH are constantly suffering from a collection of tartar, the best remedy for which is a free supply of bones to the dog.

SECT. 3.—INFLAMMATION OF THE RESPIRATORY ORGANS.

THE LARYNX, situated at the top of the windpipe, is not so often the seat of acute inflammation as in man and the horse, but chronic laryngitis is by no means unfrequent in the dog. Both are recognised by the hoarseness of the cough and bark, and by a rough sound in breathing, sometimes very audible at a short distance; and accompanied by a certain degree of increased quickness in respiration, varying according to the intensity of the attack. The TREATMENT will vary according to the acuteness and severity of the disease; and if this is urgent, bleeding and emetics will be necessary, followed by small doses of calomel, digitalis, and nitre, as prescribed at page 850. If, on the other hand, the more common form of chronic laryngitis is developed, remedies of a different nature must be adopted. A seton should be inserted in the throat, and a good discharge from it promoted by the application of blistering ointment to the tape. Iodide of potassium may generally be given in 1, 2, or 3-grain doses, with 5 or 6 drops of ipecacuanha wine and 5 grains of nitre three times a day, mixed in a little water. When this has been given for a short time without benefit, any of the warm expectorants given at page 850 may be tried; and sometimes one, sometimes another, will be of service. The dog, during the continuance of the disease, must be kept rather low than otherwise (but not rigidly starved, as is necessary in some inflammations of the respiratory organs), and should have a fair allowance of walking exercise.

INFLAMMATION OF THE LUNGS is of three kinds, depending upon the particular membrane which is the seat of mischief, but most commonly they run one into the other, and are scarcely to be accurately distinguished in practice. All are characterised by fever, with quickened respiration and pulse; generally there is cough, but not always; and in all cases there is great anxiety depicted in the countenance. The following series of symptoms mark the difference between the three forms of inflammation, whether acute or chronic. It may be mentioned that pleurisy is in theory confined to the pleura, or serous membrane covering the lungs; pneumonia, to the cellular membrane, in

which the blood-vessels and air-tubes ramify; while bronchitis has for its seat the mucous lining of the air-tubes and cells.

Symptoms of Acute Pleurisy.	Symptoms of Acute Pneumonia.	Symptoms of Acute Bronchitis.
Commences with shivering, with slight spasms and sweats. Inspiration short, unequal, and interrupted, as from pain; expiration full; air expired not hotter than usual. Slight cough only, and without expectoration. Pulse quick, small, and wiry.	Commences with shivering, without spasms. Inspiration full; expiration short; air expired hot. Nostrils red in the interior. Cough generally violent, with expectoration of rusty mucus, not very profuse. Pulse quick, full, and soft.	Commences with shivering, followed by constant hard cough. Air expired warm, but not so hot as in pneumonia. Inspiration and expiration both full. Cough after a time attended with expectoration of mucus, at first sticky, soon becoming frothy, and, finally, profuse and frothy. Pulse full and hard.
The Stethoscope gives the usual respiratory murmur, accompanied with a rubbing sound in the parts attached.	Stethoscope gives a crackling sound in the early stage, followed by increased dulness, and finally, by crepitating wheezing.	The Stethoscope gives a soap-bubble kind of sound, with wheezing.
Percussion elicits at first little or no deviation from the natural sound: after effusion has taken place there is a dull sound.	Percussion gives after the first stage a dull return to the finger.	Percussion elicits nothing of consequence.
Disease Terminates in a gradual disappearance of the symptoms, or in the effusion of fluid (pus or lymph).	Disease Terminates in resolution, with cessation of the bad symptoms; or in solidification called hepatization; or sometimes in abscess of the lungs.	Disease Terminates either by resolution, or by extension to the cellular membrane, constituting pneumonia in combination with bronchitis.

Symptoms of Chronic Pleurisy.	Symptoms of Chronic Pneumonia.	Symptoms of Chronic Bronchitis.
Inspiration always deep; expiration short. Cough dry, sometimes with expectoration; frequently changing from dry to moist cough.	Inspiration and expiration both difficult and interrupted. Cough present, but not frequent, and evidently avoided and suppressed. Expectoration rarely profuse; sometimes absent.	Respiration free, but quicker than natural. Cough constant and intense, evidently not restrained by fear of pain; sometimes to such an extent as to cause soreness of the muscles of the belly.
Stethoscope indicates an absence of respiratory murmur in the lower parts of the chest, and sometimes a gurgling noise. Strong respiratory murmur in the superior portion of the lung, very often of one side only.	Stethoscope indicates hepatization, from the entire absence of murmur.	Stethoscope gives a rattling sound, as of soap-bubbles, with a great deal of wheezing.
	Percussion also gives a very dull return to the finger. Sometimes there is a mucous rattle.	Percussion gives no result different to a state of health.
Terminates either by cure or by effusion and infiltration of the whole of the cellular membrane of the chest and belly, and sometimes of the scrotum and thighs: at last the serum in the thorax presses upon the lungs till it causes suffocation.	Terminates sometimes in resolution; or, if fatal, in a discharge from the nostrils of purulent matter, coloured with blood, and often very fetid. The animal never lies down at length, but sits up on his hind legs.	Terminates in resolution; or, if fatal, in an accumulation of mucus, and consequent suffocation. Until very near suffocation the dog will almost always lie down; whereas the contrary is the case in pneumonia.

The Treatment will a good deal depend upon which of the above three conditions is present, though not to such an extent as to be of very great consequence. In pleurisy and pneumonia, bleeding will almost always be required in the early stage, but not in bronchitis, which seldom is benefited by loss of blood. Blisters, again, relieve pneumonia and bronchitis, but are actually prejudicial in pleurisy, where the close relation between the vessels of the pleura lining the chest, and the skin covering it, often causes the irritation of the latter to extend to the former, and thus increase the mischief it was intended to relieve. With regard to internal medicines, they are, fortunately, much the same in all three. Calomel and opium, with or without digitalis and tartar emetic, will generally be useful; and in bronchitis, rhubarb, opium, and ipecacuanha, as follows:—

Calomel, and
Opium in powder, of each ½ to 1 gr.
Tartar emetic, ¼ to ½ grain.
Digitalis, ½ a grain.

Confection enough to form a pill, to be given three times a days. Or,

Rhubarb powder, 2 grains.
Ipecacuanha powder, ½ to 1 grain.
Extract of opium, ½ to 1 grain.
Compound tinct. of benzoin, 2 drops.

Mix, and form a pill, to be given three times a day.

When these remedies have had the desired effect of relieving the inflammation—as evidenced by the breathing

and pulse becoming slower, and by the dog being able to lie down, if the pneumonia has been present—some one of the cough mixtures or pills given in the chapter on drugs, under the head of Expectorants, will be found beneficial; but it is generally difficult to say which of them will best suit any particular case; a trial may be made of one for two or three days, and if that fails another should be substituted for it. The diet should be very low at first, and afterwards only a milk and farinaceous one with vegetables should be allowed for some weeks. When dropsy of the chest supervenes upon pleurisy, tapping has occasionally been had recourse to; but for sporting dogs it is wholly useless, because the animal never recovers sufficient bodily powers to be of any real service in the field; and it is only in pets whose lives are valued by their masters or mistresses that this operation should ever be had recourse to.

Chronic Bronchitis with Spasm, or spasmodic asthma, is a frequent disease among fat and petted dogs whose exercise has been neglected, and who have arrived at a mature age. The appetite in these dogs having been kept up by carriage airings, or by some similar absurdity, the blood has been loaded with impurities, and the consequence is that the lungs are called upon to cleanse it to a degree of which they are incapable; hence they become overdone, and spasm comes on with congestion of the mucous membrane of the large air-tubes, causing that frightful panting for breath which is so distressing in the human subject, and which even in the dog is by no means calculated to afford pleasure to the spectator. A fat, pursy, and asthmatic old spaniel is a miserable object of pity, and had far better be destroyed, than suffered to live on in misery. The nose is dry and hot; the animal spirits are flagging; there is a distressing cough; and exercise is followed by an aggravation of the symptoms. The Treatment should be by giving nauseating doses of tartar emetic, camphor, and henbane; or of ipecacuanha with the two last, as follows:—

Ipecacuanha, ½ to 1½ grains.
Camphor, 1 to 2 grains.
Extract of henbane, 1½ to 3 grains.

Make into a pill, and give three times a day. A blister or seaton may be applied to the side, and low diet in small bulk should be given; but there is little chance of doing more than to relieve a dog labouring under this complaint.

Consumption, or Phthisis, is a disease of the lungs, in which a peculiar condition, called tubercle, is developed in them; and when aggravated by cold, or often by the natural constitution of the dog, they become inflamed, are converted into abscesses, and cause the death of the animal by constitutional fever (hectic), and by the suffocation produced either by a vessel giving way, or by the quantity of matter discharged into the air-passages. The symptoms are very insidious, and many dogs have them developed to a great extent before their owners take any notice of their condition. Very little good can be effected by treatment, but sometimes cod-liver oil with steel will be of temporary service. In sporting dogs, however, it is seldom that it is desirable to prolong life with this condition of the system; and it is never right to breed from dogs or bitches suffering under this disease, it being decidedly hereditary.

Inflammation of the Heart is another of the diseased conditions which attack the dog, generally from overexertion in an unprepared state. There is usually a very rapid action of the heart, with a strong bounding pulse, and laborious breathing, unaccompanied by cough. The Treatment is to be conducted upon lowering principles, with digitalis and nitre, and blistering or a seaton in the side.

Sect. 4.—Inflammation of the Organs of Nutrition.

Gastritis, or inflammation of the stomach, is either acute or chronic. *Acute gastritis* is generally caused by poison administered wilfully, or by some similar accidental circumstance, such as highly seasoned food, &c. There is constant violent retching, with intense thirst, and apparently great pain. The nose is dry, and the breathing quick; no kind of food is retained on the stomach; and the poor wretch stretches himself out at full length on the cold earth. There is a constant desire to lick cold marble or iron, so as to cool the tongue, and cold water is eagerly sought after. The Treatment chiefly consists in removing the sickness, which is best accomplished by calomel

and opium, or by prussic acid, as follows:—

Diluted hydrocyanic acid, ½ to 1 drop.
Infusion of orange peel, 1 ounce.

Mix, and give every hour. Sometimes soda water, with a little brandy or tincture of ginger, will relieve the sickness. Very little more can be done except to give soothing food, in the shape of gruel, arrowroot, or barley water, and to administer mild doses of castor oil.

Chronic Gastritis is manifested in the various forms of indigestion, which are as multifarious in the dog as in the human subject. Mr. Mayhew is very happy in his description of the ordinary form of indigestion, an extract from which is as follows:—"The dog that, when offered a piece of bread, smells it with a sleepy eye, and, without taking it, licks the fingers that present it, has an impaired digestion. Such an animal will only perhaps take the morsel when it is about to be withdrawn; and having got it, does not swallow it, but places it on the ground, and stands over it with an expression of peevish disgust. A healthy dog is always decided. No animal can be more so. It will often take that which it cannot eat, but having done so, it either throws the needless possession away, or lies down, and, with a determined air, watches 'the property.' There is no vexation in its looks, no captiousness in its manner. It acts with decision, and there is purpose in what it does. The reverse is the case with dogs suffering from indigestion. They are peevish and irresolute; they take only because another shall not have. They will perhaps eat greedily what they do not want, if the cat looks longfully at that which had lain before them for many minutes and no coaxing could induce them to swallow."

The Treatment consists of an alteration of the diet from the irregular meals (which in house-fed dogs are generally given at all hours, and of all kinds of improper food), to one or two scanty meals a day of oatmeal porridge, or bread and milk, mixed with a liberal supply of water. These should be given at regular hours, and not the smallest biscuit should be allowed at other times; and this is the great difficulty which there is to contend against in treating these spoiled children of fortune. Overkindness injures them even more than brutality does the poor drawer of the dog-cart, for he preserves his general health, even though his feet are worn down to the quick. Mr. Mayhew well observes that prolonged abstinence is not generally necessary to renovate these worn-out stomachs; but, nevertheless, I am persuaded from experience that very often it will require forty-eight hours' starvation to make the luxurious pet condescend to the homely fare which is really adapted to its stomach. He says that this is attended with danger in many cases; but here I think that his great love for the animal has led him into error, for there can be no doubt that the dog, as a carnivorous animal, is adapted for long fasts, and is really better for them occasionally. If this is the case, keeping a dog without his usual food till he will take plain bread and water can never injure him, for as soon as he is really hungry he will take the proffered plain diet with gratitude, and until his appetite has arrived he is better with an empty stomach. The medicine best adapted for indigestion is a gentle purge to begin with, of aloes and rhubarb, as ordered under the Aperients, and then to give a stomachic pill or mixture, according to circumstances, of one or other of the forms detailed under Stomachic Medicines.

Sometimes, according to Mr. Mayhew, there is a form of stomach disease in the dog similar to the waterbrash of man; but I have never seen it, owing, perhaps, to my experience of these animals having been chiefly confined to sporting dogs. But knowing how closely allied their disorders are to those of man, I can easily imagine that he is right. He says, "Dogs are afflicted with a disease of the stomach which is very like to 'waterbrash' in the human being. The animals thus tormented are generally fully grown and weakly; a peculiarity of the walk shows the strength if feeble. The chief symptom is, however, not to be mistaken. The creature is dull just before the attack; it gets by itself, and remains quiet. All at once it rises, and without an effort, a quantity of fluid is ejected from the mouth, and, by the shaking of the head, scattered about. This appears to afford relief, but the same thing may occur frequently during the

day. This disease of itself is not dangerous, but it is troublesome, and will make any other disorder the more likely to terminate fatally; it should therefore be always attended to. The food must not be neglected; and either a solution of the iodide of potassium, with liquor potassæ, or pills with tris-nitrate of bismuth, must be given. The preparations of iron are sometimes of use; and a leech or two, after a small blister to the side, has also seemed to be beneficial. When some ground has been gained, the treatment recommended for indigestion generally must be adopted, the choice of remedies being guided by the symptoms."

HEPATITIS, OR INFLAMMATION OF THE LIVER, is one of the most common of all diseases to which the dog is subject. In the acute form, it is the disease which is characterised by the yellow skin and eyes, commonly called the "yellows," which in reporting dogs is so very commonly fatal. Acute hepatitis comes on from exposure to cold and wet, one or two days after which the dog is shivering and feverish with a small, hard, and wiry pulse, and a dry nose; there is generally obstinate costiveness, and when the bowels are moved the motions are white or slate-coloured, and entirely devoid of bile. If these symptoms are not soon alleviated, the inflammation goes on to destroy the substance of the liver; and the dog dies rapidly from constitutional disturbance, arising chiefly from the want of depurating power of the liver. To remove the inflammation, bleeding is generally necessary in the early stage, with 2 or 3 grains of blue pill, or 1 grain of calomel, every four hours, with or without opium, according to the state of the bowels; but generally requiring from half a grain to a grain with each dose. If the bowels are confined, a dose of rhubarb and castor-oil may be given after three pills have been swallowed, mixing 10 grains of rhubarb with a table-spoonful of oil and a tea-spoonful of syrup of poppies for a full-sized dog, and less, in proportion, for a smaller one. Sometimes a blister must be applied to the side when the inflammation runs very high; and, in all cases, the mercury must be continued until the motions acquire a natural colour, when the stomachic mixture, No. 2, may be given, and the mercury discontinued.

CHRONIC HEPATITIS is a very different disease, and is more frequently the result of bad general management than of cold. Want of exercise is the usual cause, which has given the liver the work of the lungs. The symptoms of chronic hepatitis are multiform, and no one can be depended upon except the absence of bile in the fæces, which is an invariable sign, for no gland in a state of chronic inflammation will be able to secrete good bile. Here the liver is much enlarged, and fluid has begun to be poured out by the serous membrane covering the intestines, in consequence of the impediment to the return of blood which passes from them through the liver. The dog is generally, but not always, emaciated, and the appetite is very variable. The whole appearance gives the idea of the dog being out of condition; the hair being rough, frequently rubbed off in patches, and of a dull appearance. The TREATMENT is to be conducted by rubbing into the region of the liver on both sides the ointment of biniodide of mercury, together with ipecacuanha and rhubarb internally, in sufficient doses to keep the bowels gently moved. If the mercurial ointment does not soon cause the bile to flow, it may be assisted by small doses of blue pill or Plummer's pill, added to the rhubarb and ipecacuanha; and the stomachic mixture, No. 1, should be regularly administered in addition. If these means are perseveringly continued, and the dog is regularly but gently exercised, with plain, farinaceous food, mixed with weak broth, the disease, unless very inveterate, will generally subside; and if a free flow of bile is obtained little doubt need be felt of the ultimate recovery.

INFLAMMATION OF THE INTESTINES may be said to be divided into four varieties, though one of them is more of a spasmodic than of an inflammatory nature. These are—first, peritoneal inflammation; secondly, colic, or inflammation and spasm of the muscular coat; thirdly, diarrhœa, or acute inflammation of the mucous coat; and, fourthly, constipation or chronic inflammation of the same membrane.

1.—PERITONITIS AND ENTERITIS are merely different parts of the same membrane inflamed; the former comprehending the peritoneum lining the abdominal walls, whilst the later em-

braces the peritoneum covering the intestines. In practice, there is very little difference between them, and the symptoms and treatment are the same. It is a frightful disease, and soon runs its course to a fatal termination; beginning with shivering, cold legs, ears, and nose; breath hot; pulse hard, quick, and small; the expression is an anxious one, with a staring eye; the tail is pressed firmly against the anus, and there is intense tenderness of the belly; bowels generally costive, and urine scanty; tongue dry and rough; with thirst and loss of appetite. As the disease advances, all these symptoms become aggravated, and very soon the dog dies, worn out with irritation and pain. The TREATMENT consists in full bleeding, with calomel and opium, of each a grain, every four hours. Blisters, or stimulating applications to the belly, and a warm bath, will be beneficial in some cases; but whatever is done must be done quickly, as the disease soon passes on to a fatal termination if unchecked by remedies.

2.—COLIC is very common in all kinds of dogs, and is partly of a spasmodic, partly of an inflammatory nature. There is intense pain, coming on in paroxysms, during which the dog howls with agony. Very often the attack is quite sudden, and comes on after a full meal which has been eaten much as usual; suddenly the dog starts up, with something between a moan and a groan, and then lies down again; soon after, there is another groan, and a shifting of the position, and then, after an interval of rest, and perhaps sleep, there comes on a regular paroxysm of pain, with violent howls, which soon, however cease, only to be repeated at intervals, varying in length according to the severity of the attack. The nose is not dry or hot, the tongue is clean and moist, and the appetite even is not affected; pulse full and soft, and not much quicker than natural. There is no tenderness of the belly, and pressure seems to alleviate the pain, rather than to increase it. The TREATMENT consists in giving ether and laudanum internally, in doses of from 30 to 60 drops of each, and a clyster of turpentine and laudanum, one tea-spoonful of each in half a pint of gruel. The stimulating embrocation, No. 2, should be well rubbed into the bowels; and in bad cases a very hot bath may be administered. When the colic comes on in young dogs, the injection of turpentine with laudanum and a little ether will frequently suffice without any internal medicine; but a dose of castor-oil will almost always be necessary to carry off the offending matter. Sometimes colic is followed or attended by INTUSSUSCEPTION, in which one contracted part of the bowel is driven into the expanded part below it. It cannot be distinguished from colic, and the animal is sure to die, unless an operation is performed to liberate the bowel, which might be easily done if the disease could be discovered with certainty, which however is not the case.

3.—DIARRHŒA, or DYSENTERY, comes on either from epidemic causes, or from some irritating or improper food, or from too violent aperient medicine. Unless there is an epidemic raging at the time, or the diarrhœa is clearly connected with distemper, the TREATMENT should generally commence with a dose of castor-oil, having with it a few drops of laudanum. If this is not enough to stop the purging, the anodyne mixture, No. 1, may be tried, and failing that, No. 2, adding more laudanum to each dose, if necessary, up to any extent, for this medicine is well borne by the dog in full doses. Rice-water is to be the only drink allowed; and arrowroot or rice the only food, flavoured with milk or weak mutton-broth. If the dysentery is very bad, an injection of laudanum and starch may be tried; but it is seldom retained, even for a minute or two, and unless mechanical pressure is kept up on the anus by means of a towel it is quite useless.

4.—COSTIVENESS is generally the result of chronic inflammation of the bowels, or of the liver, by which their functions are impaired; and when the former is torpid the healthy stimulus of the bile is not afforded. Dogs which are regularly exercised are not very liable to costiveness, but those which are confined to the house, or to their kennels, are often terribly tormented by it, and suffer severely from the consequences, including that painful affection, piles, to which the dog is much subject. Very often the dog suffers very severe pain from the obstruction afforded by pent-up fæces, and is utterly unable to pass them until Nature has set up an inflamma-

tion of the rectum, by which mucus is poured out, and the mass comes away with much straining. The dog thus affected is almost mad with pain; he runs to and fro, rushes into odd corners, and shakes his head in the most odd manner, and in this stage may easily be mistaken for a "mad dog;" but the suddenness of the attack, and the mass of hardened fæces easily felt in the flank, mark the difference between the two cases. In one case, some years ago, I operated on a setter, and removed a solid mass of fæces, as firm as soft sandstone, and 15 inches long, by cutting down in the flank and opening the side of the rectum. The bowels had not been moved for some weeks, and the dog was at the point of death; but though relieved by the operation he speedily sank. The proper TREATMENT in all mild cases of costiveness is to give an increased quantity of vegetable food, and substitute oatmeal and coarse wheat flour for the more refined articles of diet which some people give their dogs. If there is impaction of fæces in the rectum, a clyster of salt and water, or gruel and castor-oil, should be adminstered; and, in addition, some mild aperient may be given, but the less calomel there is used with it the better. Change of diet is the main agent in correcting costiveness, together with increased exercise, which will generally effect a cure.

If PILES make their appearance, the adminstration of some common brimstone every night in a little water, varying in quantity from 10 to 15 grains, will generally effect a cure; together with a change of diet and exercise, as above. For local treatment use the pile ointment prescribed among the astringents at page 845. FISTULA also occurs, sometimes as a consequence of piles; and it may be remedied by slitting it up; but the operation requires the assistance of a person accustomed to the use of the knife.

SECT. 5.—INFLAMMATION OF THE KIDNEY AND BLADDER.

INFLAMMATION OF THE KIDNEY is not very common in the dog, but it sometimes occurs from the use of turpentine as a vermifuge. Very rarely there is met with in the kidney a formation of stone, called RENAL CALCULUS, but no means can be used to remove it, nor are there any symptoms which indicate its presence during life.

INFLAMMATION OF THE BLADDER AND URETHRA is very common in the dog, and is marked by a discharge of yellow mucus from the end of the penis. This is the result of high feeding generally, though sometimes it comes from mechanical irritation. The TREATMENT is to be conducted by giving saline aperients.

Sulphate of magnesia, ½ to 1 oz.
Nitre, 10 to 15 grains.
Water enough to dissolve.

Mix, and give twice a week.

Balsam of copaiba may be given in obstinate cases, in doses varying from 4 to 15 drops, in a little mucilage; or one or two of the capsules now so commonly sold may be pushed down the throat. When the discharge is clearly in the sheath, a wash of the sulphate of zinc, as here prescribed, may be used.

Sulphate of zinc, 10 to 15 grains.
Rose water, 1 ounce, Mix.

SECT. 6.—SIMPLE INFLAMMATIONS OF THE SKIN.

BLOTCH OR SURFEIT is one of those skin diseases which is dependent upon too gross a diet, and is not of a specific nature—that is to say, it is not caused by contagion, nor by a parasitic insect. It begins with an irritation of the skin, which causes the dog to be constantly scratching. On examination, there is a matted mass of loose hair, as if some starch had been dropped on the coat; and when this comes off, the skin underneath is red and deprived of its cuticle, discharging also a thin watery fluid. These patches occur chiefly on the back and the inside of the thighs, and also on the scrotum, where they are very commonly met with. The TREATMENT consists in giving cooling and laxative medicines, with starvation and plenty of exercise. This will almost always effect a cure. Locally, a piece of bluestone may be rubbed upon the sores, but they will not heal until the constitutional foulness of blood has been relieved; after effecting which, local measures are seldom needed.

AN ERUPTION BETWEEN THE TOES is also constantly occurring in sporting

dogs; and it is precisely similar in its nature and cause, and also in the treatment. Bluestone is almost invariably successful, if combined with purgation and starvation. It generally requires to be well rubbed into the roots of the nails, and also to the clefts between the toes.

The remaining eruptions of the skin will be found among the Specific Diseases.

CHAPTER III.

DISEASES ACCOMPANIED BY WANT OF POWER—ATONIC DISEASES.

Sect. 1.—Chorea, Shaking Palsy, Epilepsy, and Fits.

Chorea, or St. Vitus's Dance, is a disease of the nervous system, with the exact nature of which we are not acquainted. In the dog it is generally the consequence of an attack of distemper, in which the brain was affected, leaving the state to which the name of chorea is applied. The appearance is very peculiar, and the dog, when the fore-quarter is attacked by chorea, has the most idiotic look imaginable; he goes about nodding his head and dropping his fore-leg as if he were playing the fool, but with the most helpless expression imaginable. Sometimes the whole body is implicated, but generally the disease is confined to the head, neck, and one shoulder and fore-leg. During sleep these spasms disappear, though the repose is seldom perfect, and the dog is continually aroused by dreams, and then is attacked by the twitchings, which last till sleep returns. It is in this point that chorea differs from Shaking Palsy, which is a general shaking of the body, arising from nearly the same causes as chorea, and requiring the same treatment; but as it is, I believe, invariably beyond our means of curing it, any measures to that end are thrown away. During the continuance of chorea the dog may or may not remain in good health, just as in some other disorders an animal may recover from the cause, but the effect still remains; and therefore, although in all cases chorea is preceded by some disturbance of the whole system, yet this may go off and leave the dog apparently quite well, and with a good appetite, &c., but suffering from this peculiar condition of the nervous system. If the dog is otherwise in good health, chorea, I think, never destroys life; and it is only when the original disease persists, that the dog afflicted with chorea dies, which he sometimes does, gradually becoming weaker and weaker, until at last he cannot rise from his bed, but lies there convulsed with slight spasms, and finally carried off in a severe fit of them. But as I before said, death does not occur from chorea, which is only a symptom, but from other mischief going on, and which is most probably also the cause of the chorea.

With regard to this Cause, there is little doubt that it exists in the spinal column, or the base of the brain, or in the nervous system, expanded upon the organs of nutrition, called the sympathetic; but as these parts of the great nervous system seldom indicate to our limited senses any alteration after death, we can scarcely expect to find, in such a chronic disease as this is, those marks which are absent in more acute and severe affections. Hence, although we find no actual alteration, we are not therefore to conclude that there is none, and especially when the co-existent mischief in fatal cases is so very variously located. Sometimes there is inflammation of the stomach and intestines, with diarrhœa, the result of improper feeding; again, in another case, we find worms in great numbers; in a third case, where a dog, otherwise in good health, is purposely killed, no morbid alteration can be discovered; and in a fourth there will probably be found some slight and chronic thickening of the membranes of the brain, as when there has been great mischief in that organ during distemper. Mr. Mayhew having found the stomach inflamed in all the cases which he has examined after death, has arrived at the conclusion that this is the *primary* seat of the

disease, and that the spinal cord has become affected by sympathy with it. But here I cannot agree with him, for I have carefully examined the stomachs of several young greyhounds and found no evidence of disease where chorea existed in such a marked manner as to render them useless for coursing, but in which the health was otherwise good. These puppies were purposely killed, and the absence of stomachic disease invalidates the statement made by him; though I am quite ready to admit that in all the cases which he would be likely to dissect, there would, in all probability, be the remains of stomach-disease; because he would only see those which had died from some other affection, distinct from chorea, and that affection being fatal would most probably be inflammation of the stomach or bowels. But in chorea, which persists after the accompanying disorders of the system have been relieved, there is found no sign at all; and simply for this reason, that with our present knowledge we have no certain means of discovering the evidences of disease in any part of the nervous system. For these several reasons I can only come to the same conclusion, as in human pathology, that chorea is some disordered condition of the nervous system, whose remains after death baffle our search; and that it is independent in its cause of stomach-disease, though perhaps aggravated by it.

The Treatment of Chorea must be conducted on two principles—first, to improve the general health by good food and fresh air, aided by stomachic medicines; and secondly, to give such strengthening and tonic medicines as are likely to improve the tone of the nervous system. Fresh country air is of the utmost consequence, and this alone will often dispel the attacks of chorea; but when united to a liberal diet it is doubly likely to be successful. The puppy should have plenty of good milk, or, if that cannot be obtained, beef-tea or mutton-broth, with oatmeal or wheaten flour added in proportion to the looseness of the bowels. If these are confined, they must be acted on by castor-oil or rhubarb and aloes, or some of the aperients which merely act without producing much loss of strength. When the strength is somewhat improved by diet and stomachics, sulphate of zinc, in doses varying from two to four grains three times a day, may be given; or a grain or two of quinine, with two or three grains of extract of hemlock in a pill, will be likely to be serviceable; but either must be used regularly for some weeks in order to have a fair chance of success. By these means many bad cases may be relieved, or perhaps nearly cured; but with sporting dogs, if the attack is really severe, it is seldom that sufficient improvement is effected to make the dog as efficient as before. Hence, in these instances it is perhaps better to destroy him than to persist in patching him up in a way which will only render him a burden and disgrace to his master. Shaking palsy, I have already remarked, is wholly incurable.

Epilepsy may be distinguished from the fits of puppyhood by the great champing of the jaws and struggling of the limbs during the fit, and also by the frothing at the mouth, which is generally an accompaniment of it. It comes on without notice, and in the setter and pointer is peculiarly annoying, because it generally shows itself at the time when their services are most wanted, namely, during the middle of a day's shooting. Very often this happens during the excitement of the "point," but the fit is scarcely remarked till the birds are sprung, when the dog generally falls, and is seized with struggles and foaming at the mouth. Generally this lasts for a few minutes, extending sometimes to half an hour, after which he recovers himself, and will even continue his work without loss of nose. With regard to the causes of epilepsy nothing is known; but its attacks are aggravated by improper food, and by the addition of flesh without due preparation, as is often heedlessly done just before the shooting season. The Treatment consists in attention to the general health, and in the administration twice a day of a dose of bromide of potass in a pill, which varies from 1 to 3 grains, according to the size of the dog. Aperients, or even emetics, will be more likely to do good than any other medicine, and the use of the former is by far the most likely palliative measure.

By Fits may be understood those which occur to the puppy during den-

tition or from distemper, both of which indicate either disease of the brain, or great disturbance of the digestive apparatus in consequence of worms. These fits are accompanied by slight convulsions, but no foaming at the mouth, and the dog is not speedily recovered from them, but lies exhausted after he recovers his consciousness. They are very fatal in distemper, being symptoms of great mischief in the brain; but they are not invariably fatal, because the severity of the fit does not always indicate a corresponding degree of internal mischief. These fits seldom recur many times in succession, being either speedily fatal, or else ending in a complete cure; and in this respect they are unlike epilepsy. The removal of the cause, whether worms or irritating food, is all that is necessary where time permits.

Sect. 2.—General Dropsy.

Anasarca, or general dropsy, in the dog is not a very uncommon disease among old kennelled dogs, owing to the improper way in which they are fed and kept without exercise. It consists of an infiltration of serum from the blood-vessels into the cellular membrane, caused by the kidneys refusing to act, as a consequence generally of inflammation; and the disease, therefore, is merely a symptom of inflammation of the kidneys; for which reason I might have classed it among the inflammatory diseases, but that it sometimes occurs from a different condition of that organ, owing to a want of tone in the general system. Its most frequent cause is either improper stimulants—in the case of the stallion greyhound a very frequent cause—or a gross kind of food, or sometimes from simple over-crowding of the dogs in a small kennel, occasioning a breaking down of the system, and an exudation of serum as a consequence. Among over-stimulated pets, which are not allowed any exercise, it is a very common disease, and often carries them off in a very disgustingly loathsome condition. When the liver is in fault, by throwing too much work upon the kidneys, as is sometimes the case, the urine is *yellow*, but in the usual way it is highly charged with salts, and dark *brown*, not yellow. The Treatment consists in acting in accordance with the cause—that is to say, in treating the case so as to relieve the dropsy, and not upon any fixed principles; thus, supposing the kidneys are inflamed, blood must be taken, and calomel and digitalis given in grain doses of each, without any violent diuretics, which will only aggravate the disease. If the dropsy is merely a symptom of a breaking down of the system, this must be propped by bark and steel, with perhaps ammonia in addition. When the urine is mixed with blood, in a broken-down constitution, the following mixture may be given, on the authority of Mr. Mayhew, and I have no doubt with success:—

Tincture of cantharides, 3 drops.
Water, 2 ounces.

To be given twice a day.

If the dropsy is from the kidneys refusing to act, six or eight grains of nitre may be given two or three times a day, in the diuretic mixture, No 2, but the great principle is to make out the cause and act accordingly.

Sect. 3.—Bronchocele.

Bronchocele is an enlargement of the thyroid body in the throat, sometimes to an enormous extent, so as to press upon the windpipe and destroy life. Nothing is known of the nature of this body, or of the causes of its enlargement, and all that we can do is empirically to use that remedy which we find will reduce it, and here we fix upon iodine, as the only really successful one. The iodide of potassium may be given by the mouth:—

Iodide of potassium, 3 grains.
Linseed meal, enough to make a pill.

To be given three times a day, and the following ointment rubbed into the throat night and morning:—

Iodide of potassium, 1 drachm.
Lard, 1 oz. Mix.

It is, however, of such a nature as always to interfere with the employment of sporting dogs, and they are seldom so far cured as to be as useful as before.

Sect. 4.—Worms.

The Presence of Worms in the intestinal canal is one of the greatest annoyances to the proprietors of dogs of all classes. In the greyhound they are a constant source of mischief, and

in the other varieties of sporting dogs they are almost equally common. In the puppy they are particularly injurious, cutting off his supplies of food, and also irritating his nervous system to a degree which can scarcely be credited without actual experience. Whenever a puppy is seen to look rough and unhealthy in his coat (mere roughness is no indication), and when he is also thinner than he ought to be, with a ravenous appetite, and the constant passing of small quantities of fæces, the first part of which is solid, while the latter part is loose and frothy; when he also is more dull than natural, with a hot dry nose, and offensive breath, it may generally be concluded that he has some kind of intestinal worm, and the only thing is to find out which species is present, and then to exhibit the appropriate remedy.

THE ARECA NUT (see page 853) is a very useful medicine for this purpose, given in proportion to the age and size, from the whole nut powdered, which is the dose for a full-grown dog of 40lb. or 50lb., down to a quarter of a nut for a little dog of 10lb. weight. This should be given, and followed in a few hours by a mild dose of castor-oil, when some of the worms present will most likely make their appearance, and according to their nature must the remedy be. Many people of great experience assert that it will clear the dog of any and all worms by persevering in its use; but I have always found that it only brings away a few tape-worm joints alive, and neither kills the head left behind, nor brings it away. Nevertheless, I cannot say how its use, persevered in twice a week for some time, might operate, as I have never tried more than five or six consecutive doses.

THE VARIETIES OF WORMS are as follows:—

1. THE COMMON MAW-WORM.—A short white worm, about an inch long, with a pointed tail, and a flat broad head, the intervening part being nearly round. These worms exist chiefly in the large intestines, where they are often in great numbers, and they do not *much* interfere with the health of the dog. Dr. Cobbold is of opinion that they are joints of the tape-worm, and if so they must be treated accordingly.

2. THE LONG ROUND WORM (*Ascaris lumbricoides*).—A pink or red worm resembling the garden worm in appearance, but somewhat less in size, and not so red in colour. They chiefly inhabit the small intestines, and are very injurious to the health, interfering with the digestion in every way, since they take up the chyle for their own use, and also irritate the mucous membrane by their presence.

3. THE TAPE-WORM (*Tænia solium* and *Tænia lata*).—This worm is found in two or three species, but for our purpose it is sufficient to describe its general appearance, which is that of a long flat worm *divided into joints*, and often coming away in portions, but leaving the head behind. It is, when suffered to remain long enough, from 6 to 8 feet long, and the dog may often be seen running about with a foot or two hanging from his *anus*, or curled round his tail, to his great annoyance and disgust. The tape-worm inhabits the small intestines, and is much worse even than the round worm in its effects upon the health of the animal. Its expulsion should therefore be effected with great care, and its head, which is larger considerably than the diameter of the rest of the body, should be diligently sought for, for until this is found it cannot be asserted with positive certainty that the vermifuge has been successful.

THE GENERAL PRINCIPLES OF TREATMENT consist in starving the dog for from 12 to 24 hours, and then administering the appropriate vermifuge, followed by a mild dose of aperient medicine, to carry off the worms from the intestines. In the chapter on drugs, I have given a list of vermifuges, suited to the various conditions and kinds of worms; but it will be necessary to repeat here what are the best for each kind, and their respective advantages and disadvantages, for, unfortunately, all are, more or less, injurious to the dog, and their use is only to be encouraged as a less evil than the continued existence of worms.

THE REMEDIES FOR MAW-WORM AND ROUND-WORM are as follows:—

Wormwood (*Artemisia absinthium*)
Garlic (*Allium sativum*).
Cowhage (*Mucuna pruriens*).
Santonine, or the active principle of worm seed (*Artemisia contra*).
Indian pink (*Spigelia Marylandica*).

Areca or Betel nut (*Nux areca*).
Stinking hellebore (*Helleborus fœtidus*).
Powdered tin and glass.
Calomel (*Hydrargyri chloridum*).

For TAPE-WORM the following may be used with advantage :—

Kousso (*Brayera anthelmintica*).
Barbadoes tar (*Petroleum Barbadense*).
Pomegranate bark (*Punica granatum*).
Male fern (*Filix mas*).
Spirit of turpentine (*Spiritus terebinthinæ*).

The chief varieties of these are alluded to in the chapter on drugs; but their more peculiar properties may better be enlarged upon in this place, and I will therefore describe the effects and properties of each.

WORMWOOD is grown in this country indigenously, as a downy under-shrub, with large dingy-yellow flowers. The whole of the plant is aromatic and bitter, and yields a green volatile oil, in which the vermifuge power seems to reside. It is an excellent remedy for young puppies, because it acts as a tonic, and thereby prevents the further accumulation of worms from the weakness of the stomach, which is so often the real cause of their presence. It should be given in powder, in doses varying from 10 to 30 grains, mixed into a bolus with any syrup or honey.

GARLIC is a bulb too well known to need description. It is of an acrid pungent taste, and is very useful in expelling the MAW-WORM when stronger remedies are not safe, as in a delicate puppy. The mode of administration is by mashing up the bulbs in a mortar, and giving them in mass as a bolus. From a drachm to half an ounce is the dose, according to the size of the puppy; or even less in very small puppies.

COWHAGE consists of the hairy down from the pods of the *Mucuna pruriens*, a twining shrub, with purple flowers, having a disagreeable garlicky smell, and succeeded by pods containing three or four seeds enveloped in the down called cowhage. Its operation is purely mechanical, the minute hairs irritating the worms, and causing them to let go their hold upon the mucous membrane, which itself is protected by the mucus covering it. It is a very good vermifuge as a temporary expedient in dogs which are in present use, but it does not destroy those which remain, and will not quite clear a dog in the usual way; but some people are of opinion that it is one of the most valuable of all vermifuges. The mode of giving it is by scraping the cowhage into treacle or honey, with which it is mixed, and of this a teaspoonful or two is given to the dog every other morning for five or six doses, followed at last by a dose of castor-oil, and if the bowels are costive, by one in the middle of the time.

SANTONINE is difficult to procure pure, but when genuine it is a most useful remedy for round-worm, which it removes with great certainty. The brown santonine, which is the best variety, should be obtained from a first-rate druggist, and mixed into a bolus, with a considerable quantity of rhubarb or jalap—that is from 5 to 15 grains of either or of a mixture of both. From ½ to 3 grains is the dose of santonine, according to the age, mixed with the above aperient, and given twice a week for three or four doses. Its effects are, as far as I know, very satisfactory, in not injuring the stomach, and it is therefore the least prejudicial of all the vermifuges upon which any reliance can be placed; but its expense is an obstacle where large numbers are to be dosed.

INDIAN OR CAROLINA PINK is an American perennial root, usually sold in this country in bundles of the entire plant, about 20 inches long. The useful part is the root, which consists of numerous yellowish-brown fibres, having a faint odour and a nauseous taste. When tolerably fresh it is a strong vermifuge; but it is very variable in its effects, and, I am inclined to believe, is much adulterated by an admixture of other plants as a substitute, because in some few cases I have known it irritate the bowels to a dangerous degree, but whether accidentally or not I cannot say. It is not a medicine which can be given to a greyhound in training, or to a delicate puppy. It is administered by infusing an ounce of the root in half a pint of boiling water for an hour, and giving from one-eighth to one-quarter of it to the dog when fasting, followed in six hours by a dose of castor-oil.

THE ARECA NUT is powdered, and given either with the food or as a bolus,

in the dose of a whole nut for a large dog, or less in proportion to a small one. (See page 853). It is a comparatively innocent remedy, and generally efficacious.

The Stinking Hellebore is a plant which grows in the shady parts of our woods in great abundance. The leaves should be gathered early in the autumn, and carefully dried and kept in a stoppered phial. Its effect is solely upon the worm, as it is rather a stomachic than an irritant. From 5 to 15 grains may be mixed with an equal quantity of jalap, and made into a bolus, which is to be given twice a week. For young dogs out of condition it is very useful, and it may be given at all times.

Powdered Tin and Glass act only mechanically. As much as will lie upon a shilling of either may be mixed with lard and given as a bolus to the dog fasting.

Calomel is a very efficient vermifuge for maw, or round-worm; but it requires great caution in its use, as it always weakens the dog in his stomach, as well as his general system, and renders him liable to cold. From 2 to 5 grains are the dose in a pill, with jalap.

Kousso is a native of Abyssinia, where it is the proper remedy for tape-worm, with which the natives are much afflicted. The flowers are the parts used, and they are powdered before being sold, though for what purpose, except for its more ready adulteration, I am at a loss to know. It is universally said to be a very innocent vermifuge in human medicine, and wherever it has been used it has been more or less successful without doing any injury to the stomach; indeed, it does not seem to produce any remarkable effects, except occasionally to cause the stomach to reject it, and it seldom purges. I have used it in a great number of cases upon the greyhound with good success, and without the slightest inconvenience; but I have been informed by Mr. Cass, of Thirsk, that several of his dogs were nearly killed by taking it; and a similar result has occurred in other kennels, in one instance going on to a fatal termination. I endeavoured to obtain from him the particulars, but could not succeed, and I am therefore unable to do more than mention the circumstance as causing a possible necessity of caution. There must, I think, have been some mistake either in the article itself or its mode of administration; but still it may have been as he says, and the medicine may be occasionally injurious to the dog, in spite of the numerous cases in which it has been tried, and the close analogy between the dog and man, in whom there is no doubt that it is perfectly harmless. When it is given it should be infused in boiling water till cool—one ounce of kousso to half a pint of water, to which the juice of one lemon should be added. From one-quarter to half of this (including the powder by agitation before giving it) should then be poured down the dog's throat, and followed six hours after by a dose of oil. This should be repeated once or twice a week till the dog seems clear of his worms, the stomach being always emptied by a twelve hours' fast before giving the kousso, and plenty of slops being allowed to work it off.

Barbadoes Tar is a mineral production, found floating on the internal waters of several of the West India islands; but it is now very seldom used, and I know nothing of its properties or effects.

Pomegranate Bark is obtained from the tree bearing the same name, which is a native of Africa. The bark is sold in short quills, of a greyish yellow colour externally, yellowish inside, brittle, with a faint odour and an astringent bitter taste. It is a good vermifuge for tape-worm, but it is not much used in this country, India being the chief locality where it is in vogue.

From one ounce to half an ounce is the dose, infused for 24 hours in a pint and a half of boiling water and then boiled down to one-half and filtered. The dose should be divided into three portions, and one-third given every half-hour till all is taken.

The Male Fern is met with in this country, and it should be dug up in summer, cleared of roots, fibres, &c., but not washed; and dried quickly and thoroughly in the open air, in the shade without heat. The tufts and those parts only which are greenish internally should be used. They should be reduced to powder at once, and preserved in well-stoppered bottles; the powder never being kept over a second summer, as it soon loses its strength. When genuine and fresh it is the very best remedy for tape-worm we possess; but

it can only be obtained with certainty in a state fit to be depended on by digging for it, and preparing it oneself. The botanical characters of the plant are as follows:—The underground stem large, tufted, scaly; producing in spring beautiful leaves, pinnate, with oblong, serrated, obtuse leaflets. The Dose is 1 scruple to 2 drachms of the dried powder, given in a bolus on an empty stomach, and followed in two hours by a brisk purge either of castor-oil or jalap. The Oil prepared from it is sold in the shops, of which from 10 to 20 drops are a dose, mixed up with linseed meal and a little boiling water, half being given at night and the other half the next morning, followed in six hours by a brisk purge.

Oil or Spirit of Turpentine is certainly a very powerful agent in the expulsion of tape-worm, and in some persons' hands it appears to be comparatively innocent; but in many cases it upsets the health greatly for a long time after its exhibition. It may be given either tied up in a thin piece of bladder, and put down the throat like a bolus, after which the bladder is digested and the turpentine liberated; or by mixing it with a little suet to such a consistency as to make a bolus. In this latter way, however, it is very commonly rejected by the stomach; and if it is to be given, the bladder is the best mode of using it. From half a drachm to half an ounce should be tied up, or mixed as I have said, and given fasting once a week at the oftenest. It should be followed as usual by a good dose of oil; and it will generally, if it is kept down, cause the worm to evacuate its quarters; but too often it causes also so much irritation and inflammation of the mucous membrane as to be highly prejudicial to the dog's state of health. If, therefore, the kousso or the male fern will have an equally good effect—as I believe they will—unattended by these evils, no one, I should think, would sanction the use of the turpentine. There are, however, some few obstinate cases in which the worm resists all ordinary means, parting only with small portions, and its head obstinately retaining its vitality and its hold. In such cases it is wise to try the turpentine after the failure of other means, and it may then perhaps justify the praise which has so generally been accorded to it. Yet it must be recollected that until kousso was introduced, turpentine was always considered an unsafe remedy; and it is much more so in the dog than in man, as it cannot in the lower animal be given mixed with castor oil, because it always when so lowered causes vomiting, and is rejected, so as entirely to negative its qualities as a vermifuge.

With these remarks I shall conclude the section on Worms, by observing, that though I have noticed all the remedies at present in use, I consider areca-nut the most adapted for general purposes, while in those cases where it has failed, the choice is between santonine, stinking hellebore, Indian pink, kousso, and male fern. The three first for maw and round worms, and the two last for tape-worm.

CHAPTER IV.

DISEASES ARISING FROM IMPROPER FEEDING OR NEGLECT.

Sect. 1.—Anæmia, or Poverty of Blood.

Poverty of Blood comes on in the dog either from bad food or from overcrowding, either of which will produce it. It consists in a state of the blood in which the red particles are deficient in number, and this vital fluid is altogether of too thin a consistency, and consequently too watery in its nature. The dog looks emaciated and hungry, with a staring coat and a sunken eye; and his lips and tongue being of a pale pink, instead of the rich red which they ought to exhibit. It is generally seen in large towns, where puppies are sometimes reared in back yards to which the sun has no access, and where a free current of air is a rarity.

The Treatment is founded upon a complete alteration from previous habits,

fresh country air and good food being substituted for the state of things which has produced the disease. A tonic medicine will also sometimes be required, consisting of quinine in combination with steel, as follows :—

Sulphate of quinine, 1 grain.
Sulphate of iron, 1 grain.
Extract of camomile, enough to make a bolus.

To be given twice a day.

Worms are generally present in this state of the constitution, and as soon as the strength will allow of the proper medicines being used to remove them, they ought to be exhibited, but with great care. In spite of everything which may be done, few puppies ever fully recover from this condition, and therefore in the case of greyhounds it is almost hopeless to attempt their treatment.

SECT. 2.—RICKETS AND ENLARGED JOINTS.

THE STATE OF SYSTEM CALLED RICKETS depends upon nearly the same mismanagement as described in the last section; but it is sometimes seen even in rural districts, when the puppy is confined to a small damp yard, and is badly fed, or deprived of bones. Phosphate of lime is the main agent in stiffening the skeleton, and if food containing this salt is not afforded in sufficient quantity the bones are of a gelatinous character, easily bending under the dog's weight, and consequently rendered by nature too bulky for his future well-being as an animal fitted for the chase. Many breeders like to see a puppy show larger joints than usual, and consider them an indication of strength ; but I am strongly of opinion that the reverse is the case, and that the puppy which has them is not nearly so strong as one whose limbs are grown more like those of an old dog. This, however, is a disputed point, and I would never advise the rejection of a puppy because his joints were *all* enlarged ; but if one is much larger than the others, it is a sign of worse disease than rickets, and more nearly allied to what, in human pathology, is called *scrofula*. Sometimes the swellings disappear, and the disease is cured, but generally these joints become more and more inflamed, and finally go on to form matter, and to make the dog entirely lame.

Little can be done for this in the way of TREATMENT, and the destruction of the puppy is the best plan of proceeding. In rickets, however, a great change sometimes takes place, and the bending of the limbs or the enlargement of the joints gradually disappears, leaving only some slight indication of what has existed. Too often, however, the bone is weak and liable to fracture, and at the time when the dog is wanted for the sport to which it is dedicated, the bone gives way, and the time and trouble occupied in its rearing are found to have been totally thrown away ; hence the necessity for good feeding in the rearing of all young dogs ; and, as I have advised in the case of the greyhound, too much care can scarcely be bestowed upon them.

CHAPTER V.

SPECIFIC DISEASES.

SECT. 1.—MANGE.

MANGE consists of several eruptions, which are in common language grouped under the above head, the chief popular distinction being that it is communicable from one to the other by contact,—that is to say, that it is "catching." Hence, the sporting public exclude surfeit, blotch, &c., from this definition, and only include under the term mange those chronic eruptions which are capable of being taken by one dog from another. There are, however, several distinct varieties, which are not sufficiently described ; and every now and then I see a fresh and perfectly new form, so that I cannot now give a complete epitome of them. Every sportsman must know that when his dog has an eruption, the first question asked is the following, namely—"Is it mange, or not?" And the answer is very important ; because general treatment will serve in the one case while it is useless in the other. The following are

the forms of mange which I have met with; but, as I said before, I am constantly meeting with a new variety.

Virulent Mange, in its more ordinary form, occurs most commonly in utterly-neglected and large kennels, where dogs are suffered to remain in large numbers together, in all their filth, and without exercise. It is seldom met with elsewhere, but it is highly contagious. The skin is bare of hair in large patches, but these are not in regular forms, being gradually shaped off into the hairy parts as if from scratching, and are nowhere quite free from hairs. The skin is dry and rough, with a few oozing scabs here and there, and with inflamed creases, extending wherever there is a fold. The eruption is generally confined to the back, bosom, and inside of the thighs. The health is not much affected, but from the loss of sleep, and constant irritation caused by the itching, there is sometimes some little fever. There is reason to believe that an insect is the cause of this form of mange. The Treatment consists in a gentle dose or two of aperient medicine internally, and externally of the application of the compound sulphur ointment, reduced in thickness by a little oil, to make it more easily rubbed into the roots of the hair. This should be continued every night, for three or four times in succession, after which the dog should be well washed with soap and water, and he will then most probably be cured. If the cure is not complete, the following wash may be tried; but the dog must be muzzled for some days, or he will, in licking himself, swallow enough of the application to poison himself—to guard against which, as far as possible, the aloes is added:

Decoction of white hellebore, 4 ozs.
Decoction of tobacco, 4 ounces.
Corrosive sublimate, 8 grains.
Aloes, 2 drachms. Mix, while hot.

The Second Form of Virulent Mange, supposed to depend on a vegetable growth, somewhat similar to mould, is more rare than the first variety, and much more difficult to eradicate. Its appearance differs little from the first kind, the chief point of distinction being that this kind usually attacks young puppies, whilst the insect form is generally found upon the adult animal. In both the hair falls off; but in the second kind there is more scab, and the itching not being so violent, it is not so much scratched off, so that often there is a considerable accumulation. The Treament is required to be very energetic locally as well as internally. If the dog's health is upset, as is generally the case, tonics or stomachics will be required; and externally apply the following ointment:—

Green iodide of mercury, 1 drachm.
Lard, 1 ounce.

Mix, and rub a little in every night, using a muzzle to prevent licking. A very small quantity only should be rubbed into the skin itself, leaving none in the coat.

Mange, with Thickening of the Skin, appears to be more dependent on constitutional disorder than the first two varieties, and for it the arsencial solution is no doubt very valuable. In this disease the discharge is very offensive; the skin is thick, and pouring out an irritating ichor which occasions a constant and violent itching; the hair falls off, and the dog is continually scratching himself. The Remedy for this state is a cooling diet, without any animal food of any kind, and composed chiefly of potatoes and other vegetables. A smart purge may be first given, and then the liquor arsenicalis in doses of from 2 to 10 drops three times a day, *mixed with the ood*, according to the size of the dog. If this dose makes the eyes red, or stops the appetite, or occasions vomiting, it may be diminished one half; but the best plan in all cases is to begin with a full dose at first, and when the desired effect is produced, gradually to diminish it. Less than two or three months will seldom effect a cure, and the sulphur ointment will often be required to complete it.

Red Mange is the most easily detected of all the varieties, because it always shows itself by altering the colour of the hair, whether the dog is white or not. If white, the hair becomes pink; if brown or red, it is of a brighter shade. It does not, however, fall off, except from the constant scratching which takes place. There is no eruption visible, but the skin is more red than natural. The remedy is either the ointment given in the preceding column, or a mixture of blue mercurial or compound sulphur oint

ments in equal proportions. At the same time the dog should be treated with liquor arsenicalis (as described in the previous paragraph) and reduced in food, so as to be thereby improved in his health, which is generally affected considerably before this disease appears.

A FOURTH VARIETY is decidedly of a scaly character, unattended by much inflammation, and not accompanied by much irritation. In the only case which I have seen, it was cured by the liquor arsenicalis and ointment of iodide of mercury.

IN ALL CASES OF MANGE, a due amount of exercise should be enforced; but this is so much neglected, that it will require great caution to see that it is attended to. All dogs with mange are avoided in consequence of the contagious nature of the disease, and few servants like to take them out with them for that reason. Nevertheless, exercise is essential to recovery; and if the dog is worth curing, he is worth taking out as a means towards the cure.

SECT. 2.—CANCER.

CANCER is a malignant disease, which chiefly attacks the reproductive organs in the male and female. It first makes its appearance in a large lump like a walnut, and in that state occasions very little pain; after a time the tumour enlarges, and at last a small point softens and ulcerates, and then an open cancer, attended with a foul discharge, makes its appearance. Being perfectly incurable, it is of no use to prescribe any remedies for this disease, and the dog affected with it had better be destroyed.

SECT. 3.—ENCYSTED TUMOURS.

These are very common in the dog, and consist of small soft bladders lying close under the skin, of a circular form, and devoid of pain or inflammation. They vary in size from that of a pea to the volume of a small orange. The only remedy is the knife, which may be used with perfect safety by any one accustomed to it. The skin must be saved and dissected back, and the tumour, when exposed, may readily be lifted out of its bed without much dissection; after which the parts may be suffered to heal of themselves.

SECT. 4.—DISEASES OF PARTURITION.

IN HEALTHY PARTURITION the bitch seldom suffers much; but sometimes in a small bitch, when the sire is of much larger size, the disproportion between the whelps and the mother is so great as to occasion great difficulty and danger; and sometimes also from other causes.

In order to ascertain whether or not the bitch is in pup, a careful external examination will generally be necessary, when, on pressing the fingers deeply between the rectum and the bladder, several small round or oval bodies may be felt, in number according to the future litter. Between the fourth and seventh weeks the whelps cannot so easily be felt; but, though they are said to be lost, a careful examination by a practised hand will always detect nearly all of them lying close against them. After the seventh week they appear very plainly, and the belly rapidly swells till it attains the size which it presents at whelping time; about three or four days before which the teats begin to swell, and on the day before are generally full of milk—a pretty sure indication of the near approach of labour.

IN THE PROCESS OF PARTURITION, the bitch should be left to herself as much as possible; and if of good size and healthy, she will nearly always pass through it without trouble. Sometimes, however, her pelvis is too small to allow of the passage of the whelp, and then either she must die, or man must afford his aid by mechanical means; but this operation is too difficult for any but a practised hand, and therefore I should recommend the aid of a skilful veterinarian to be in all cases called in. If a part of the whelp is born, and the remainder does not come away for some time—owing apparently to the exhausted condition of the bitch—it is quite safe to give a little brandy and gruel by the mouth, and then steadily to draw away the whelp, by laying hold of the part presenting with a piece of tape round it, or a strip of calico.

As soon as all the whelps are born, the bitch may be allowed to rest for a short time, unless she is very much exhausted, when the brandy and gruel may be given, as directed in the last paragraph. After an hour, in the usual way, a little lukewarm gruel may be allowed; and in the course of four

hours another quantity of the same. No meat of any kind should be given for three days, during which time the state of the bowels should be regulated, if necessary, by castor-oil; and milk thickened with oatmeal or wheat-flour, or broth with the same thickening, or with arrowroot, if diarrhœa is present, should be the only food. Sometimes, after the first week, the whole litter is too great a draw upon the system, and part must be removed from the bitch, and brought up by hand, if it is wished to preserve them, feeding them from a common baby's bottle, with the India-rubber nipple now so commonly in use; but a very thick and stout one should be selected, or the puppy will compress it too much with its tongue.

When the bitch is much reduced by her suckling, she sometimes is subject to fits, for which the only remedy is the removal of her whelps, and the exhibition of strong beef-tea, with bark, as prescribed at page 853, and ammonia in addition; together with port wine and arrowroot, if the bowels are relaxed. After the first week, and, indeed, gradually during the fourth, fifth, and sixth days, meat must be added to the other food, especially if the bitch has had much animal food before whelping.

If the bitch is inclined to devour her young, she should be allowed to remain very quiet, and very little animal food should be given her. A dose of oil should always be given a short time before her whelping time; and if she should, nevertheless, devour them, another dose should follow, so as to carry off the effects of so heating a meal.

If a foster-mother is determined upon, all that is necessary is to muzzle her until the strange whelps have sucked her, and lain for some time with her own; she will then fail to distinguish between them, and her own offspring may be removed with safety, leaving the foster-whelps to her care, which she will exercise just as fully towards them as if they were really hers.

If the bitch has been "put by," as it is called, and is not in whelp at the end of nine weeks from her "heat," she will be fat and indolent, with her teats full of milk. At this time it is better to take a little blood from her, and to give her a smart purge once or twice, together with vegetable food; after which she will generally recover her health and spirits, and become much as usual at the expiration of another month or five weeks. This ought to be fully considered in the case of all sporting dogs.

CHAPTER VI.

ACCIDENTS AND OPERATIONS.

Sect 1.—Cuts, Tears, and Bites.

Solutions of Continuity, as these accidents are designated in the dignified nomenclature of human surgery, are easily treated in the dog, because his skin is very readily healed, though not so speedily or in the same manner as that of man. In man a clean cut, if properly treated, heals as if by magic; and in three days large surfaces of many inches in extent will often be firmly healed by a kind of glue thrown out from the cut surfaces, which afterwards becomes organized. In the dog and horse, however, no such glue is thrown out, and the oozing is always of a watery nature; so that apposition must always be maintained by stitches, and even they are only of use in preventing extreme displacement while they remain inserted. In slight cuts, tears, and bites, therefore, it is better to leave them alone to the healing powers of the dog's tongue; but in those cases where a large flap is torn down, as in the legs for instance, a stitch or two should always be inserted, over which a bandage should be fixed, and the dog kept muzzled until union takes place. Without the last precaution stitches and bandages are of no use, since the dog will always manage to remove them, and will tear out any stitches which may be inserted, however carefully they may be tied.

The first thing to be done is to wash the parts, if dirty, and then with a

common needle and thread to put in several stitches, according to the extent of the wound; but only fixing it so as to keep it nearly in position, for an exact adaptation is of no use whatever. In putting in the stitches, the following is the plan to be adopted: take the needle and thread and insert it in the outside of the skin, on one side of the wound, and bring it out on the inside; then pass it from the inside towards the out of the opposite part of the corresponding flap on the other side, and tie the ends so as to close the wound. Repeat this as often as necessary, and cover all up with the bandage as already directed. After four or five days the threads may be cut and removed, because they are no longer serviceable, and only serve to irritate the skin; and from this time the whole dependence must be placed upon the bandage in keeping the parts together. In some parts—as, for instance, the flank—a bandage can scarcely be applied; but even there it is wonderful how nature fills up an apparently irremediable gap. I have often seen a flap torn down by a spike, which has hung down from the flank for five or six inches, but at the end of a month scarcely any scar can be seen. The owner therefore need never despair as long as the skin only is the seat of the accident; but when the abdominal muscles also are torn, the bowels are apt to protrude, and the parts, if left to themselves, will never regain their original condition. Here a circular stitch must be practised, so as to pucker up the parts like the mouth of an old-fashioned purse, and if the walls are thick enough the plan may be practised with success; but in the thin tendinous expansions covering the middle of the belly there is great difficulty in carrying out this plan of rectifying the injury.

The mode by which nature heals all the wounds of the dog is by *granulation*, in which small red bladders are thrown out by both surfaces, which, after they are in contact for some hours or days, coalesce and form a bond of union, but if they are allowed to rub against each other this union cannot take place, and the growth is confined to the angle of the wound only. Hence the use and necessity of a bandage, which keeps the two surfaces in close contact, and hastens the cure in a remarkable manner; effecting in ten days what would often require ten weeks if left to the dog's tongue alone. When the granulations rise above the level of the surrounding skin, a piece of bluestone may be rubbed over them daily; and if the whole sore is too red, and the granulations large and smooth, a little friar's balsam may be brushed over it; or, what is far better, a solution of nitrate of silver, of the strength of from three to eight grains to an ounce of *distilled* water.

Sect. 2.—Fractures.

Fractures may easily be treated in the dog by any person possessed of ordinary mechanical ingenuity. The bones most commonly fractured are those of the extremities: but almost all throughout the body are at times subject to this accident.

Fractures of the Ribs are very common from the kick of a horse, or from the thick boot of a man, who sometimes in his rage at the attack of a dog administers a blow with his iron-shod toe which is sufficient to destroy life, or, at all events, to break one or more ribs. When from any cause they are fractured, the best plan is to apply a horse girth round the whole chest, by buckling it smoothly twice round, or, if the side of the dog will not admit of this, the girth may be adapted to one circle only. This may be buckled so tightly as to prevent the dog using his ribs in breathing, and to confine him to the use of his diaphragm for that purpose, by which means the ribs are kept quite still, and nature in about three weeks unites the broken ends. For a broken shoulder blade or true arm, there is little to be done; nor in the case of a fractured pelvis or upper thigh-bone can much good be effected by interference. Nature will in all cases work a cure so far as to enable a new joint to be formed; but the animal is rendered useless for sporting purposes, and can only be kept for his or her breed.

In Fractures of the Limbs gutta-percha splints will be found to be most serviceable. But if they are not easily procurable, thin strips of deal will supply their place, and may be encircled with tapes to keep them in position. The first thing to be done is to adapt the splints to the leg, so that the parts should be kept in a tolerably correct position while the inflammation is

being subdued; for if the fracture has been the result of much violence, the consequent swelling will generally forbid the immediate and final putting-up, or "setting," as it is called, of the broken bones. For this purpose narrow strips of deal answer better than gutta-percha, and three or four of them may be put on, extending from joint to joint, and not merely encircling the limb, but allowing space between for the application of cooling remedies. Warm water fomentations answer for this purpose, and succeed better than cold lotions, and may be repeated five or six times a day or even oftener, so as to keep the skin and hair constantly wet the first two or three days: and in the intervals the lotion of arnica, as given at page 851, may be applied with a sponge. If the leg swells much the tapes may be loosened, but all the time the dog must be kept constantly muzzled, or he will soon get rid of tapes, splints, and all. In a few days the swelling subsides, and the arnica lotion being still applied, the splints may be gradually tightened.

At the end of from five to seven days the leg may be permanently "set," as follows:—Take a sheet of stout gutta-percha, of about the thickness of a penny-piece for large dogs, and of a halfpenny for small ones; measure the circumference of the sound leg with a piece of string at the largest and at the smallest parts, and cut off a piece of gutta-percha as long as the broken part of the leg, measured from the joint above to the joint below the fracture, and of the width of the circumference of the leg as indicated by the string. If the two pieces of string vary much, the gutta-percha must be varied accordingly, so that it will nearly meet after surrounding the limb. When cut to these proportions it is to be soaked in water some degrees below the boiling point—at which this material is rendered too soft for our present purpose. It is then moulded round the *sound leg*. For a fracture in which no wound of the skin occurs, the gutta-percha may be large enough to completely surround the leg; but in a compound fracture, as it is called, or one in which the skin, &c., as well as the bone are broken, the gutta-percha should only partially surround the leg so that the wound may be readily dressed daily. Holes are punched in each side of the gutta-percha, so that tapes may be inserted by which the edges are brought together, and the whole rendered quite secure. It is a very good mode of managing these accidents, as the gutta-percha may be moulded to either the lower thigh or arm, or to the metatarsal or metacarpal bones. It should be kept on for at least six weeks or two months, during the whole of which time a muzzle should be worn; but after the first three weeks it is better to allow the dog to take a little exercise, as he will not put his leg to the ground if it gives him pain; and air as well as exercise are necessary to effect the process of union in its full perfection.

Sometimes, however, gutta-percha is not procurable, and then recourse must be had permanently to slips of deal or bamboo-cane, which should be long enough to extend from the joint above the fracture to that below it. As the dog's coat is tolerably thick, it is not necessary to insert any kind of padding between the splint and the skin, and two splints (one inside and one out) will generally suffice. Then let an assistant slightly extend the limb, by taking hold of the joints above and below, taking care to straighten it at the same time. The operator now adapts his splints, and grasps them, when the assistant shifts his hand to them, and allows the operator to tie his tapes, after which the limb is said to be set.

Sect. 3.—Dislocations.

Dislocations consist in a displacement of the end of a bone from its connexion with the one above it; and they may occur at the hip, stifle, shoulder-joint, or knee, as well as at the joints of the toes. The hock is seldom dislocated without fracture, but such an accident has been known to occur, and great trouble would be experienced in its reduction, on account of the shape and nature of the joint. Dislocation of the stifle-joint is not very common, it being very strongly guarded by ligaments, and broad also in the surfaces of the bones of which it is composed. The hip-joint is very often the seat of dislocation, and is one of the most intractable of all to manage. The socket projects in a prominent manner from the body of the pelvis, and when the head of the thigh-bone is thrown out of its cup it sinks at once deeply by the side of it, and can scarcely be drawn

out of its bed by any force which can be applied. In the anterior extremity, the knee is the chief seat of this kind of accident, and it is dislocated quite as frequently as the hip, but its reduction is ten times as easy, because both bones can easily be grasped, and extension being made, they are speedily brought into a proper relative position. But though they are readily reduced, they are as easily thrown out again; and, therefore, great care is required to prevent this unhappy result. The elbow and point of the shoulder are seldom put out, because these joints are so securely guarded that the bones of which they are composed are more inclined to break than to leave their sockets. In both the hind and fore legs the toes are often put out; and besides this accident the tendons are apt to give way, causing the accident which is called "the letting down of the toes."

THE TREATMENT OF ALL DISLOCATIONS consists in putting the displaced bone back again into its socket as speedily as possible, for if allowed to remain long out of its proper situation it contracts fresh adhesions, and can scarcely be drawn away from them by any practicable force. The dislocated knee is reduced simply by pulling steadily the two bones away from one another; an assistant seizing the arm, and the operator making extension by laying hold of the foot and pastern. After it is reduced, a piece of list should be crossed in the form of the figure of 8 behind the joint, so as to prevent it from being straightened, and thus again displaced; and this position must be maintained for some time, in order that the torn ligaments may have time to unite. In the dislocated hip, unless very recently done, chloroform should be used, because the muscles of that joint are very powerful, and it will require great force to overcome their action without its assistance. The dog is first placed on a table, with a firm cushion under it; chloroform is then administered, by placing a sponge dipped in it in the end of a muzzle, such as is drawn at page 245. The holes at the sides should be stopped, by pasting strong paper over them, so as to make a complete cone, one end of which is adapted to the jaws, and the other is closed by the sponge; so that the dog, when it is put on, can only breathe through the sponge. After a short time he snores and breathes heavily, and then the sponge may be withdrawn for a time, and the attempt made to lift the bone into its socket. I have, however, failed, even with the aid of this agent, in reducing a hip dislocated only for about ten days; and I am not aware of any case of more than a few hours' duration where a hip has been replaced. Nevertheless, in a valuable dog, such as that on which I made this attempt, which was a highly-prized puppy presented to me, and of a very scarce breed, the attempt is worth making, especially as it occasions no pain.

SECT. 4.—OPERATIONS.

IN OPERATING ON THE DOG, either a regular muzzle should be put on, or ordinary tape or cord should be applied to the muzzle, binding it firmly round the jaws two or three times, and carrying it back to encircle the neck so as to prevent the dog from getting it off in his struggles. This precaution is necessary to guard the operator against his bites, which in some dogs would be highly dangerous, as they do not always distinguish their best friends, though often they will submit to great pain without a murmur when they have long been sufferers. Chloroform may be used with great advantage (as directed in the last section) in those delicate operations where the struggles interfere with the due performance of the operation; for it is almost impossible to keep the dog perfectly still, and in operations about the abdomen the intestines are sometimes protruded by the efforts of the dog; whereas, with chloroform, all may be managed with perfect quiet, and the poor brute is relieved of his pain. A common scalpel, or a long bistoury, in the case of sinuses which require to be slit up, are the most useful kinds of knives; and the sportsman himself will seldom be able to manage more than the operations requiring these knives. The removal of injured toes, dewclaws, &c., and the slitting up sinuses or fistulas, may readily be effected, or even the excision of small tumours, or the like; but more than that had better be left to the educated practitioner. The dog's skin should always be preserved as far as possible; and in removing any parts this texture should be left behind, trimming away any slightly ragged points

which may appear likely to interfere with a perfect cure; but even these will often do more good than harm, and will fill up a gap which their removal would be sure to occasion.

Bleeding is easily effected in the dog with a common lancet in the neck, if he is not unusually fat. The hair is cut off closely in a patch by the side of the wind-pipe, and then a string is tied rather tightly round the lower part of the neck; after which a vein distended with blood may be felt there, which may be readily opened by inserting the point of the lancet with some little force, owing to the thickness of the skin, and cutting out again. After the blood has flowed sufficiently, a pin must be inserted in the lips exactly as in the horse-bleeding, and the ends twisted over with a piece of tow; but all this ought to be seen in order to be understood. If the neck is too fat, a vein on the inside of the fore-arm may generally be reached with the lancet.

Cropping is an operation which is often performed on smooth terriers (not fox), who are required to have their ears trimmed to a point, while some other breeds, as spaniels, fox terriers, &c., keep their ears entire, but have part of their tails removed. Cropping the ears requires very great skill and practice: 1st, both ears must be cropped alike; 2nd, neither too much nor too little of the "burr" must be removed; and 3rd, the cartilage must not be left bare. The usual plan is to remove one ear with a sharp pair of scissors, and then place the portion which has come off on the other ear to serve as a guide to the scissors in trimming the latter. But with every precaution to make the exact amount of mutilation, the skill employed is thrown away, unless care is subsequently taken to prevent the contraction of the edges during the process of healing. They should be watched daily, and if the edges are at all in wrinkles, they must be pulled out, and some neat's-foot oil applied with a feather. A repetition of this process will generally insure a nicely-pointed ear; but sometimes nothing will prevent deformity, from the tip falling over on to the top of the head, and the cartilage being naturally weak.

Removing the Dewclaws is necessary for those breeds which work much in covers, such as spaniels, beagles, &c. The proper plan is to draw back the skin towards the knee as much as possible from the claw, and cut it off with sharp scissors. This leaves enough skin to cover the stump, and the healing process is rapidly finished. The best age is the time when the puppy is being suckled, the mother's tongue being the best salve.

In Shortening the Tail, all that is necessary is to take off about one-third with a sharp pair of scissors, the earlier in point of age the better.

PART V.

DISEASES OF THE DOG AND HORSE.

BOOK IV.—THE DISEASES OF THE HORSE, AND THEIR TREATMENT.

CHAPTER I.

FEVERS.

Sect. 1.—General Remarks.

The Fevers to which the horse is subject are of a very peculiar kind, and quite distinct in their nature and treatment from those of the human species or of the dog. For this reason the successful practitioner in one department is often wholly at sea in the other; and this is not only the case with fevers, but in all the other diseases of the horse. In man as well as in the dog there is a great variety of febrile diseases, but in the animal we are now considering they are generally reduced into two—first, simple fever; and secondly, symptomatic fever, or that attending upon inflammations or upon wounds, or other local injuries. But besides these I shall include catarrhal fever and malignant epidemic or typhus.

Sect. 2.—Simple Fever.

Simple Fever, or Common Catarrh, is almost always the result of cold, and is ushered in by shivering, followed by loss of appetite and spirits, with quickened pulse, unequal distribution of heat, so that often one leg is hot and the other three are cold, or *vice versâ*; dry and hot tongue, costiveness, and scanty urine of a high colour, and passed with difficulty. The breathing is generally somewhat quicker than natural, with more or less cough, but unless the lungs are inflamed there is seldom *much* acceleration. The disease generally runs a short course if uncomplicated with any of the inflammations hereafter to be described, in which case it runs into symptomatic fever.

The Treatment of Simple Fever consists in reducing the system in proportion to the amount of increased action going on. Many slight attacks may be removed without bleeding, but if the pulse is high, and all the other symptoms are in an aggravated form, two or three quarts of blood should be taken away, in order to guard against the occurrence of inflammation, which is to be carefully watched for. A smart purge, in the shape of the aloetic ball No. 8, is almost always required; but the horse should, if possible, be mashed on the night before, or he will be liable to colic from the colon and rectum being full of impacted fæces. If there is not time for this, castor-oil must be given at once, and its action assisted after a few hours by a full clyster of warm water or gruel. When the bowels are freely moved, the following fever powder may be given two or three times a day, until the horse stales freely and his urine is of a proper colour, when the medicine may gradually be discontinued:—

Powdered nitre, 1 ounce.
Camphor, and
Tartarised antimony, of each 2 dr.

Mix. The water must be given in a warm state and the corn wholly abstracted, giving bran mashes in lieu, but in small quantities only. The clothing should be warmer than usual, and if the legs are cold they should be bandaged with flannel. Plenty of litter is to be allowed, and the box kept as cool as possible unless the weather is very cold, when it may be maintained at a temperature of about 55 degrees of Fahrenheit. In a few days, unless some complication occurs, the fever subsides, and the horse may be walked out for a short time, and may afterwards gradually resume his usual food and exercise.

Sect. 3.—Catarrhal Fever, Influenza, or Distemper.

This, like simple fever, usually commences with a shivering fit, succeeded, however, by higher symptoms of

fever than in that species. The eyes are red and sleepy-looking, the membrane lining the nose is pale red, and generally there is some discharge from it. This at first is watery, but it soon becomes thick, and after a time it has the consistence almost of an oyster, which it resembles as it gushes forth during the drinking of the horse, or other action requiring forcible expiration. Very often the pharynx is sore, and the horse swallows with difficulty, even water appearing to give great pain as it goes down. The cough is generally loud and frequent, and even occasionally painful to the horse, who expresses his sufferings by impatiently stamping with his fore-feet. Weakness rapidly gains ground upon the horse, and very soon he can scarcely stand; whilst at the same time the legs swell. The pulse is generally about 65, but seldom hard. This state seldom lasts many days, as the horse loses his strength so rapidly, that he either sinks or recovers in a week or ten days. The disease appears to depend upon epidemic causes, though it is nevertheless sometimes contagious, if we may believe the reports which have been handed down to us. Very often it goes on to inflammation of the lungs, and at other times ends in typhus fever, commonly called putrid or malignant fever Inflammation of the lungs is distinguished from it by the following symptoms, which are well marked in the fever and nearly absent in the inflammation to which I am now alluding. These are—first, the very quick pulse: secondly, the early and copious nasal discharge; thirdly, the pale colour of its lining membrane, which is a deep red in pneumonia; fourthly, the frequent cough, with the soreness of throat; fifthly, the rapidly failing strength.

The Treatment of Catarrhal Fever will vary a good deal with the precise nature of the attack; but in most cases the horse will ill bear depletion of any kind, and hence the importance of distinguishing between it and pneumonia. Sometimes, though rarely, bleeding is indispensable, but never in large quantities; and more than three or four quarts should never be taken, and only in the early stage; a gentle dose of aperient medicine, such as the ball No. 9 or 10, will generally be required, and this should be assisted by a clyster, or by raking, so as to prevent any obstruction in the rectum caused by the mashing having been omitted for want of time. After the purge has acted, the fever mixture, No. 8, may be exhibited; and when the weakness is great, with a cessation of all the tendency to inflammation, the tonic ball, No. 3, should at once be used, with good gruel and warm mashes, and even sometimes port-wine and ale.

Sect. 4.—Malignant Epidemic, Putrid, or Typhus Fever.

Putrid Fever commences either as simple fever, or as common catarrhal fever; but this soon goes on to produce great prostration of strength, with fetid breath, discharge from the nostrils, and entire loss of appetite. Its course is much more rapid than in man, and more so even than in the dog. A congestive state of the vessels comes on, and they rapidly give way, by which life is soon destroyed. It is highly contagious, and few horses seized with it recover; indeed, its nature is such that most proprietors determine to destroy the infected animal, in order to prevent its spreading.

The Treatment most likely to succeed is a highly stimulating and supporting one, consisting of the following ball:—

Carbonate of ammonia, ½ drachm.
Powdered bark, ½ ounce.
Linseed meal and water, enough to make a ball.

To be given three or four times a day The strength must also be supported with ale-caudle poured down the throat; or, if the bowels are relaxed, rice and port-wine.

Sect. 5.—Molten-Grease.

Molten-Grease, a term formerly much used in farriery, is neither more nor less than a kind of critical diarrhœa coming on in gross horses attacked by fever, and it should not be too suddenly checked, though it is perhaps scarcely safe to allow it to run on many days. If, therefore, in an attack of fever there is this copious purging, let it be encouraged by giving decoction of linseed, or gum-arabic dissolved in water, so as to sheath the parts, and yet not absolutely to check the discharge. When the dung comes away in small lumps, a pint of castor-oil should be given; the embrocations Nos. 1 or 2

may be well rubbed into the belly, and everything done to favour the removal of the disease, without positively stopping it by astringents. If, in spite of this treatment, the purging continues, a clyster of 2 drachms of opium, dissolved in a quart of starch, should be thrown up with great gentleness and care, which will generally succeed in quieting the mucous membrane.

Sect. 6.—Symptomatic Fever.

Symptomatic Fever being the result rather than the cause of inflammation, can scarcely be considered by itself. The simple fever often arises from exposure to cold, just as in the dog or in man; but this species generally arises from over-stimulation in some form, either by extra warmth, or more food than usual, or by over-riding or driving. Whatever the precise cause, the effect is always to produce a congestion in some internal organ, generally followed by an inflammation, and accompanied by symptomatic fever. Thus, a horse is brought up from grass, and suddenly placed in a hot stable, with a liberal allowance of corn. In a short time his eyes become inflamed, his appetite fails, he has a violent cough, and he is what the trainers call "all to pieces." Now, this arises entirely from over-stimulation at all points, for not only is he kept in a constant state of increased heat, but the fire is fanned by feeding him with corn, and often by giving him an amount of work to which he has not been accustomed. This is a constant occurrence with inexperienced horse-masters, and numberless eyes are lost through its means, to say nothing of inflamed legs and disordered stomachs. The symptoms in all cases are those of simple fever, except that very little shivering precedes it; but in addition we find quick and laborious breathing, with stony coldness of the legs and ears, if the lungs are inflamed; or in inflammation of the liver, yellowness of the eyes and mouth, with orange-coloured and scanty urine; and so on with the various kinds.

The Treatment of Symptomatic Fever is always merged in that of its complication until it is reduced, after which, in some cases, the debility caused by the fever, *and by the remedies*, often requires peculiar supporting measures. There is in the horse of the present day a much greater disposition to sink than in those of former times, even within my memory; and more tonic medicines, as well as food, will often be required. This has arisen, I fancy, from the constant recourse to the lancet, which has been the fashion in veterinary medicine until the present time, and in human medicine until about 20 years ago. In both, I believe, it has led to a complete alteration in the forms of disease, which are not nearly so highly inflammatory as was formerly the case, nor do they bear such lowering treatment; whilst, on the other hand, they require, in many cases, a boldly stimulant plan of treatment, which a quarter of a century ago would have been justly reprobated as allied to insanity. Bark and ammonia are now often required to be given to the horse very early in an attack of inflammation—that is to say, as soon as the lowering measures, necessary in the first instance, have had their effect; and if, on the other hand, these last are pertinaciously carried out too long, the animal sinks from exhaustion into a state from which nothing will arouse him, and dies from a kind of putrid fever, or something very nearly allied to it.

CHAPTER II.

INFLAMMATIONS.

Sect. 1.—Inflammation of the Brain and Nerves.

Staggers, or Apoplexy, appears to depend in all cases upon pressure on the brain, arising either from actual mischief within it, or from temporary congestion, owing to distension of the stomach, and hence called Stomach Staggers; whilst the first form is called, from the symptoms, Sleepy or Mad Staggers, according as the horse

is rendered insensible, or more than usually excited. The disease usually begins with drowsiness, the eyes being inflamed and watery; the pulse is full, but not generally quicker than usual; bowels costive, and urine scanty. The next change that occurs is either a fit of insensibility or of furious delirium, both of which indicate pressure on the brain, though they have received the distinctive names above alluded to. In STOMACH STAGGERS there is a yellowishness of the eyes and mouth with a twitching of the muscles of the bosom, and great general feebleness rather than drowsiness. The fore-legs totter, and at last give way, after which the animal lies insensible, and can seldom be recovered.

THE TREATMENT is very different in the two diseases; free bleeding and purging, with turpentine clysters, will be required in the former, and will generally afford relief. If, however, the horse continues drowsy after their action, the head should be blistered, and a rowel inserted under the jaw, together with the internal use of nitre, tartar emetic, and digitalis, in doses of one ounce of the first, and a drachm of the two last, every four hours.

STOMACH STAGGERS is more easily prevented than cured, and when fully developed is generally fatal. If it is clear that over distension of the stomach is the cause of the disease, and the brain is only affected by sympathy, bleeding will avail nothing, and strong local stimulants, or stomachics, as they are called, afford the only chance. But the difficulty of diagnosis is very great, and the history of the case is the only guide to be depended upon, because the symptoms are so very similar in the one case to the other. If, however, the opinion is formed, one of the following drenches should be given, which will arouse the dormant powers of the stomach, and enable it to resist the decomposition going on within it, as well as to expel its contents:—

Tincture of ginger.
Compound spirit of ammonia.
Tincture of lavender, and
Sulphuric ether, of each 1 drachm.
Camphor mixture, and
Warm ale, of each 4 ounces. Mix.

Or, Barbadoes aloes, 3 drachms.
Tincture of capsicum, 2 drachms.
Gin, 4 ounces.
Warm water, 4 ounces. Mix.

A stimulating clyster, as described at page 851, will also be useful; and by its aid the horse sometimes is enabled to resist the overpowering action of the swelling contents of the stomach, and to pass them on; after which a mild dose of physic and lower diet will complete the cure. But too often the disease goes on in spite of all remedies, and the horse dies from pressure upon the brain, arising from congestion.

MEGRIMS is clearly a temporary and slight congestion of the brain, arising from the excessive heat of a summer's day, or the pressure of the collar upon the veins of the neck, or from the excessive restraint of the bearing-rein. The attack comes on by the horse suddenly stopping and shaking his head, as if annoyed by his bit, or by something wrong in his bridle; to examine which the driver perhaps gets out, and while so doing the horse suddenly falls, or wheels round in a circle, and then goes down as if one side was deprived of all power. There he lies for a short period, varying from a few seconds to five or ten minutes; after which he raises his head, and stares about him, and then, if permitted, he will rise almost as if nothing had happened, and be ready to proceed as before, though generally in a profuse sweat. Sometimes, however, but very rarely, the horse dies in these attacks, and in all cases the danger to the driver is great, because it is impossible to foresee their occurrence; and, as they may take place on the unguarded side of a steep hill, or in fifty other dangerous situations, they are always liable to place the driver in a condition of extreme peril. When once they have occurred they are likely to occur again, and for that reason the owner of a horse attacked with megrims had always better get rid of him; or, at all events, after a second attack, for many horses are known to have had only one fit of this complaint. To RELIEVE it, a few quarts of blood should be taken as soon as possible, and on the spot if the attack is very violent, or if not, as soon as the horse is in his stable. A dose of purging physic should also be given, and a few days' rest allowed, as well as a more than usually quiet and moderate style of driving.

LOCKED-JAW, or TETANUS, AND HYDROPHOBIA, are very similar conditions of

the nervous system; not exactly inflammatory perhaps, but more nearly allied to irritation. In the former case the muscles of the body are rendered rigid by some accidental irritation, as a stake or pole driven into the chest, &c. The jaw is almost always the first part attacked, and hence its name of locked-jaw; but nearly all the muscles of the body are in bad cases rigid and unyielding, although this state at intervals gives way. Very little can be done in the way of TREATMENT, though some cures have been announced from opium, chloroform, and Indian hemp. Bleeding also is said to have worked wonders, and so has the wet sheet in the hands of the water doctors; but I have never yet known a well-marked case of tetanus recover; though there are, no doubt, cases in which slight attacks of locked-jaw have disappeared with the removal of the cause which produced them. A veterinary surgeon should always be called in in such cases, and his advice must then be followed, so that it is unnecessary to dilate here upon the details of treatment.

HYDROPHOBIA is also a disease very closely allied to tetanus in all but its cause, which is from the bite of a mad dog or cat. It comes on with violent spasms of the body, of a somewhat similar kind to those of the above disease; and it is equally, or even perhaps more intractable; but the spasms are not persistent, and the horse after a time is very violent, and ready to attack everything that comes in his way; he froths at the mouth, and fights with his fore-legs; or else he is timid, and shrinking from all contact with man—a symptom as common as the mad variety. Water is always eagerly sought after, as in the dog. There is no cure, and the horse should at once be shot.

SECT. 2.—INFLAMMATION OF THE EYE AND MOUTH.

INFLAMMATION OF THE EYE comes on in several forms; the most *common* of which is sudden in its attack, and accompanied with very little symptomatic fever. The horse is well over-night, but on going to him the next morning the groom thinks he has hit his eye, and if not experienced in these matters he takes little notice; the lids are swollen, the white of the eye covered with red vessels, and the transparent part of the *cornea* rendered opaque by a bluish-white film, of more or less extent according to circumstances. Sometimes, it is true, a blow has really occasioned the mischief, but more often it arises from cold; and sometimes, again, a piece of dust has lodged in the lids, and on being removed all is speedily right again. A DOSE of physic, with a bran-mash and an ounce of nitre in it, on two or three evenings, will generally put all to rights; especially if aided by the cooling eye-wash, Astringents (No. 3 or 4).

REGULAR OPHTHALMIA is a much more virulent and unmanageable disease, though it comes on in the same way, and can only be detected in the early stage by the severity of the symptoms and the greater intolerance of light. The opacity soon becomes universal over the whole cornea, and the iris is also implicated, so that this beautiful dark curtain is often covered with white lymph, or even sometimes with pus or blood. After a time the symptoms abate, but only for a short period, and the end generally is that the eye is lost, often implicating the other one as well. The cause is generally connected with a change from cold to warm stables, with high feeding, and strong work. Horses require a much longer seasoning to the warm stable than is generally given them, and thousands are yearly sacrificed to a want of due caution in this respect. More eyes are lost in this way than by any other, and yet it is in many cases impossible to avoid the disease by all the care in the power of the most experienced groom. For this reason, some horses never will stand corn or stable management, and yet their eyes remain perfectly good at grass, even in the depth of a severe winter.

THE BEST REMEDY FOR OPHTHALMIA is a lowering plan of treatment, consisting of bleeding, either general or local, washes as for the simple inflammation physic and the fever medicine No. 8. Bleeding in the vein at the inner angle of the eye sometimes affords great relief, or a scarification of the vessels of the white of the eye; but the best remedy of all is a rowel in the cheek. This disease almost always leaves its marks behind, consisting of a peculiar semi-opacity of the transparent part of the eye, with a muddiness of the coloured part, called the iris, and sometimes some

faint indications of approaching cataract, in the form of a deeply-seated white speck in the middle of the pupil, or of white lines diverging from its centre to its circumference. The eye is somewhat contracted by the dislike which the horse has to light; and hence an affected eye will look smaller than its sound fellow, though in reality there is no change in the actual size of the ball.

CATARACT is an opacity of the lens in the centre of the eye, and is generally the result of the above inflammation, though sometimes in purely hereditary cataract it comes on gradually, without the slightest evidence of inflammation. At first there is only slight milkiness of the pupil, which gradually increases until it becomes perfectly white. When inflammation is the cause, the cornea is seldom of a pure white, but more or less yellow; and, in very old horses, when cataract comes on, the radiating lines from the centre to the circumference are very strongly marked. No REMEDY can be brought to bear upon cataract, and the horse affected with it is incurably blind.

AMAUROSIS is also almost always an incurable disease, and for all practical purposes it may be considered as such. The eye looks sound, and there is no opacity of any kind; but, nevertheless, the horse is blind, and likely to remain so. It is an affection of the nerve, and beyond the power of medicine; the only thing likely to relieve it being a rowel under the eye.

LAMPAS consists of a swelling of the ridges in the roof of the mouth, which are called the "bars," coming on chiefly in young horses. The horse is seen to drop his corn, from an inability to chew it, owing to the pain given in the attempt; and on examining the mouth the bars are seen to be level with the teeth, from the swelling. The TREATMENT required is only a dose or two of physic, with the absence of corn, and the substitution of bran-mashes at night, with an ounce of nitre added to every other one.

CANKER OF THE MOUTH generally arises from the pressure of the bit, and a few touches of bluestone will generally rectify the evil.

SECT. 3.—INFLAMMATION OF THE LUNGS, &c.

PNEUMONIA, as this disease is called in scientific language, is one of the most dangerous diseases the horse is subject to in the ordinary way, and it is also one of the most common. It is generally mixed up with PLEURISY, or inflammation of the pleura, though most writers pretend to be able to distinguish the one from the other. The symptoms are—first, general feverishness, with dulness; secondly, heaving of the flanks of a hurried nature, with a quick pulse; thirdly, cough, dull and hollow, and attended with some pain. Soon afterwards the respiration becomes very quick and laborious, the pulse increases in frequency, and yet is small and without power. The horse looks anxious and uneasy; the nostrils are expanded, and show a deep red lining to them; the eyes become fixed, and the head is held down. At this time the ears and legs become deadly cold, and the horse is so distressed that he refuses to lie down until forced to do so by weakness, from which he seldom rises again.

THE TREATMENT should be energetic in the early stage, bleeding being the sheet-anchor in these cases, and pretty copiously too; it should generally be carried far enough to produce fainting, less than six quarts seldom sufficing for the purpose. A pretty active purge, in the shape of the castor-oil drench No. 13, will suit the state of the horse better than aloetic balls, because there is seldom time for mashing. A warm clyster may also be thrown up, either of water or gruel, with a double handful of salt. BLISTERS on the sides of the ribs are of great service, and in the less severe and more chronic form, rowels should be inserted in the sides of the chest behind the elbow. Hand-rubbing of the legs, followed by flannel bandages, will serve to restore the languid circulation in the extremities, and warm clothing to the body must keep the whole skin from chilling, as it will do when exposed to the cool and well ventilated air which the state of the lungs requires. The stall or box should never be kept at all close, for fresh air is of as much importance in this disease as all the other remedies put together. Nitre, digitalis, and tartarised antimony should always be administered in the form of a ball, until the cough becomes loose—

Nitre, 1 ounce.
Digitalis ½ drachm.
Tartar emetic, 2 drachms.

Mixed with linseed meal and water to form a ball.

When the first bleeding has not subdued the inflammation, it should then be repeated, but not without due care, and seldom with advantage after the second day. After a time, when the weakness is the only remains of the disease, stomachic medicine and generous diet will raise the strength of the horse rapidly, if no amount of organic mischief has resulted. But if the inflammation has gone on to produce destruction of the cells of the lungs by exudation of lymph or pus, there is always a long recovery; and, generally speaking, the wind remains permanently short and often thick. Sometimes even the condition called "broken wind" comes on as a finale to this condition; but generally it is rather a sequel to other states than to this.

INFLAMMATION OF THE BRONCHIAL TUBES, or BRONCHITIS, is only a severe form of catarrh, of which it is a frequent termination. It may be treated by some of the expectorant balls given in the list of drugs. No. 5 or 7 are those most likely to suit this condition of the system.

CHRONIC COUGH is a very usual sequel of catarrh, and sometimes also of pneumonia. Besides these causes it is also brought on by sudden change of treatment, from a cool field at grass to the high temperature of the stable and the stimulating food given in the manger. It is merely a chronic degree of inflammation of the bronchial membrane, and it can only be relieved by such measures as will reduce that state. In many cases it depends upon a disordered condition of the stomach, which appears to affect the bronchial membrane by sympathy; and, again, in other cases worms are the immediate cause. The cough balls No. 5, or those called stomachic cough balls, No. 6, will generally suit this particular condition of the mucous membrane.

ROARING is an affection of the top of the windpipe, by which a noise is produced when the breathing is accelerated, similar to a snore in note, but much quicker and sharper. There are various degrees of this noise, from the marked roaring which may be heard a hundred yards off, to the slight whistling noise of the "whistler," or the almost inaudible sound produced by the "high blower." In all cases, however, there is a mechanical impediment to respiration, and the only question is as to its seat. Sometimes a larynx has been examined in which no trace of disease could be discovered, whilst in a few cases thickening of the lining membrane has been noticed; and in others a wasting of the muscles has been pronounced the only deviation from the natural condition. It appears, therefore, that roaring is produced, first, by thickening of the mucous membrane; secondly, by distortion of the cartilages of the larynx; and thirdly, by a paralytic condition of the muscles moving the top of the larynx itself, so that the chink through which the air passes is not kept open by their power. Inflammation is generally the cause of this mischief, unless it is produced by the bearing-rein, or by the crib-biting strap round the neck, or by the hands of the buyers in the various sales at which some horses are exposed. If twenty or thirty *horse-coupers* are constantly "coughing" a horse, it is not to be wondered at if he becomes inflamed in the organ which has been so punished. Some horses stand this ordeal for three or four successive sale-days, and then begin to exhibit the chronic cough which they have hitherto obstinately refused to show to their tormentors, who are never satisfied till they have made the horse they are examining cough in some way or other; and to do this they do not hesitate to stick the end of their finger into the space between the cartilages in the most ruthless manner. There is another controversy as to the *time* when his noise is produced, whether during expiration or inspiration. My own belief is that the grunt which the dealers produce by their threat of the stick is made during expiration, but that roaring is *chiefly* heard during inspiration; though in very bad cases it will be detected not only in inspiration, but also in the opposite condition of the lungs. It is now a frightfully prevalent complaint, among racehorses especially, in whom the early stabling and the quantity of corn given them appear to have the effect of producing it. With very slow work it does not materially interfere, but whenever the horse is pushed beyond eight or ten miles per hour, or in bad cases even on the trot, the noise is immediately heard; and the respiration is more or less affected by the

impediment producing it, whatever that may be.

One of the most common causes of roaring is the inflammation attending upon strangles, and generally from neglect during the attack, or from the employment of the horse before he has recovered from it. In badly managed racing stables this is very apt to be the case, because every trainer is anxious to resume work as soon as possible; and is therefore very apt to begin as soon as the worst symptoms have subsided, and before the parts about the larynx have recovered their tone. If they were allowed time, in many cases the effects would go off; but by the use of this delicate part while still in a weakened state, and often while suffering from chronic inflammation, this last condition becomes permanent, and either a thickened state of the membrane remains, permanently obstructing the passage, or the nerves of the part lose their delicate sensibility to external impressions, and refuse to open the aperture of the larynx to a proper width for the due admission of the air. It is a much-vexed question, whether roaring is hereditary; that is to say, whether a horse descended from a roaring sire or dam is more likely to be attacked by the disease than one which is the son of sound progenitors. It appears to me that there is little doubt that he would be more likely to turn out a roarer in the former case than in the latter; but still there can be no question that many unsound horses are the sires of sound stock, and *vice versâ*. Roaring is an effect, not a disease in itself, and unless the cause is known it can scarcely be predicated whether a horse is likely to transmit the condition to his stock. If it is the result of *neglected* strangles, for instance, in an otherwise sound larynx, it is not likely to be transmitted; but if the horse is naturally of a delicate constitution and liable to cough, *that* will be almost sure to reappear, and, as a consequence, the effect called roaring.

As regards TREATMENT, when roaring is once fully developed, all the powers of the whole veterinary college would fail to effect a cure; but in preventive measures much may be done, if only horse-masters and trainers would be careful in every attack of disease about the throat to treat it vigorously, and to throw the horse by during its persistence. In strangles, for instance, the thickening and swelling of the glands often lasts for several weeks, owing to proper measures not being adopted at once. The same applies to chronic cough, which should never be neglected; and which, I believe, in the roaring of racehorses is in nine cases out of ten its precursor. The corn is too often continued for the sake of condition, when the horse ought to be as cool as possible. Chronic cough is almost always inseparably connected with bronchial or laryngeal inflammation, and if the latter condition is present roaring is always threatened. For this reason this state of things should always be attended to, and the horse should be considered an invalid as long as his cough lasts; his corn should be stopped, and proper remedies adopted, or he will incur the risk of the *permanent* mischief which I am now considering. How often we hear that a racehorse is "coughing," and even witness his efforts on the course to relieve himself, yet how seldom is a horse stopped from running by such a state. Owners do not like to be disappointed when a large stake is invested; and especially when it is known that in many cases a horse may "pull through" with a cough on him. But the result is that the cough is rendered worse, and is not perhaps cured for a long time; while a few weeks or months afterwards a slight "noise" is heard, and soon afterwards he becomes a decided "roarer." Such is generally the course of things, and though many men will tell you that roaring has made its appearance without any notice, yet, I believe, in almost all cases it will be found that it has been preceded by more or less cough and attendant laryngeal inflammation.

STRANGLES is an inflammation of the mucous membrane of the throat and nose, with swelling of the salivary glands about the angle of the jaw. It is very similar to mumps in the human subject, and, like that disease, it is almost confined to the growing period of life—occurring, in ninety-nine cases out of a hundred, in the colt between the second and fifth years. There is generally a discharge of white and thick matter from the nose, with a difficulty of swallowing, and some little feverishness; the glands swell to

a great extent, and the inflammation generally goes on to form an abscess, which bursts sooner or later, leaving a cavity that takes some time to heal. When suppuration goes on kindly, the mischief subsides without leaving any ill effect; but if the abscess does not proceed healthily, the glands become enlarged to a frightful extent and press upon the larynx, so as to impede its functions; besides which, the inflammation extends to that important organ, and from this cause the result to which I have alluded in the last paragraph so often takes place. The great swelling of the glands, and their not adhering to the jaw, as well as the suddenness of the attack, are almost certain distinguishing marks of the disease.

When this is clear the TREATMENT should at once be commenced, as follows, by which all risk is avoided, and the glands are at once stimulated to form matter, that being the natural termination of their inflammation. In the first place, the hair should be carefully removed by the scissors from the whole of the parts swelled, as well as from about three inches beyond that space in all directions; then rub into the glands for half an hour, with the hand, the following liquid blister:—

Strong mercurial ointment, 4 ozs.
Oil of origanum, ½ ounce.
Powdered cantharides, ½ ounce.
Olive oil, 2 to 4 ounces,

according to the weather; the former quantity sufficing in the summer, but the latter being required in cold winter weather, to make the application liquid enough to *rub* into the throat. This will speedily increase the inflammation and swelling in the external parts; but the action is a *healthy* one, and it relieves the internal and important organs (as the larynx and its nerves, for instance), so as to prevent any mischief to them. After two or three days the swelling and discharge from the skin produced by the blister abate, and in the meantime the parts should be well fomented, three times a day, with very hot flannels wrung out in boiling water. This treatment generally brings the matter to a head in about four or five days, after which the abscess is to be treated as a common one; but if it does not burst by that time it may be opened with a lancet, though I am strongly of opinion that nature manages the best opening in most cases. Whichever is the mode of procuring the opening, it must be maintained afterwards patent, by means of a thick piece of lint dipped in the digestive ointment given at page 848, and left in it. Poultices are not, I think, advantageous, because they cannot be maintained at a proper temperature, and the warm water fomentations answer all the purposes which they are intended to effect, without leaving a cold application in the interval to undo all the previous good, which in the poultice is invariably the case. The constitutional remedies are merely an aperient ball at first, with another or two at intervals, if required, and either of the fever balls Nos. 4, 5, or 6, night and morning; or, if the colt is very feverish, the cooling drench No. 8. Bleeding is very rarely desirable, as its effect is to reduce those powers of nature which are required to produce the suppuration; and it often makes the case which would be short, sharp, and easily cured, a long and tedious business, in which the glands will neither come forward to suppuration, nor go back by resolution. When the suppuration is thoroughly established, a generous diet of linseed and bran, or carrots and bran, with hay steamed, if possible, is the best which can be adopted. When a cough lingers behind, it must be treated as for chronic cough, which it may be considered.

THICK WIND is merely an imperfect condition of the respiratory organs, from a variety of causes—such as excessive fat, want of exercise, old standing inflammation and its results, or a naturally defective formation of the chest. But in ordinary language thick wind means such a condition as cannot be got rid of, though it may be relieved, and which remains in spite of the most careful training. Every horse when overloaded with fat is more or less thick-winded—that is, he will "blow" on the slightest exertion; but he could not be called thick-winded, because his state is only temporary, and by careful preparation his wind may be made as perfect as possible. The disease almost always consists in a solidification of the lungs from pneumonia, so that the air cannot enter the cells, which are filled up with lymph, or a substance resembling it, but of a

colour generally blue, mixed with red. From this cause, horses with capacious chests by nature are often bad winded, because, though the cavity is large, great part of the lungs is rendered useless. Time occasionally effects a cure, but. generally speaking, no TREATMENT other than palliative, is of any avail, and that can only be directed to the stomach and general system. This organ may be so managed as to husband the lungs—that is to say, it may be kept moderately empty whenever the horse is to be worked, and in this way it will afford more space than usual for the lungs to play, or as much of them as are still sound; and, consequently, what cells there are open will be more fully employed than in a loaded state of the stomach. In the same way the liver, if properly emptied, by good management will aid the lungs materially, and therefore attention to both these organs is of the greatest consequence; beyond this nothing can be done.

BROKEN WIND is often a sequel to thick wind, both being preceded by inflammation. But as in human medicine so in veterinary medicine, doctors will differ, and thus we find one veterinarian of great eminence maintaining that in this state air cannot easily enter the lungs, but is readily expelled from it, while most others agree in thinking that the broken-winded horse can inspire air readily enough, but requires too powerful acts of the muscles of respiration to effect its expulsion in expiration. Any one of ordinary observation who examines the horse in this state will readily observe that the latter opinion is the correct one. The poor animal draws his breath quietly enough, but when he attempts to empty his chest there is a "flap" of the diaphragm, which is of a spasmodic character, in consequence of its having more to do than it can well manage; and this first flap is followed by another, aided by the whole of the muscles of the abdomen and ribs. The first action is the natural expiratory effort, which being foiled in effecting its results, by the valvular character of the enlarged air cells, calls into play the auxiliary muscles of respiration, and together they overcome the resistance. The disease consists in an enlargement of the air-cells, by a breaking down of their partitions, and in many cases by the formation of new ones of an unnatural character, caused by the giving way of the cellular membrane which connects the various lobes together, and which giving way is called *emphysema*. The consequence is, that when these cells, often as large as walnuts, are filled with air, *and pressed upon* by the walls of the chest to effect expiration of the air they contain, their large size causes them to be forced upon the small opening by which the air enters, and by consequence tney act as a valve to their own contents. If a common bladder is filled with air, and in that state pressed against some adjacent substance, in such a way that its neck, or opening, is pushed against it, the tube is obliterated by the pressure, and it requires considerable force to overcome its resistance; whilst if it were left alone with the opening upwards, or free in any direction, it would by its own elasticity effect its own relief. In the lungs, however, of the broken-winded horse the cells have lost their elasticity from over-distension, and they depend entirely upon the walls of the chest for the necessary pressure; for which reason it is that there exists the necessity for the double effort.

The CAUSE OF BROKEN WIND is, I believe, in all cases the violent galloping of the horse while suffering from the effects of inflammation. This may be either at grass or while at work; but I doubt much whether the horse kept absolutely at rest will ever become broken-winded. He will often become exceedingly thick-winded, so much so as to be unfit for work of any kind; but until he is put to work, or else gallops of his own accord. he will not produce the valvular condition of the cells which is the essence of the disease. I have often been told of a horse going out to grass sound and being taken up broken-winded; but on inquiry I have ascertained either that he had been galloped a good deal to catch him, or that he had done so of his own accord, or else *that the state of his wind was not observed* till after he had been put to work. Turning out to grass is a fertile source of this disease, because when exposed to the weather, the horse is constantly liable to pneumonia, and, as a consequence, to a solidification of the lungs, which soon ends in a breaking down of the cells (*emphysema*), if

he is used fast, or himself tries them by his gallops.

There is no cure for broken wind, but much may be done by palliative TREATMENT. The horse should be kept very cool, both in point of temperature and feeding; mashes of bran and carrots, with a small quantity of corn, form the best food. The hay and water should never be given in large quantities, and green food will generally suit better than dry, because it soon passes out of the stomach; but it should never be given in an unlimited amount, or it will do more harm than good. If there is cough present, the expectorant ball, No. 5, will be of service, and it may be given every night for a week or two, but beyond that time it will rarely be of any service. Steady regular work will often keep the horse in such a state that he can manage to carry on his breathing tolerably well; but strong or fast work, or entire idleness, have both of them an equally prejudicial effect; the former by still further increasing the enlargement of the cells, the latter by increasing the tendency to thickening and solidification which produced them.

PHTHISIS PULMONALIS, the consumption of the human subject, is not unknown in horse medicine, and it is evinced much in the same way. There is chronic cough, with great emaciation, and in the latter stages usually obstinate diarrhœa; the horse sinks at last, worn out by the discharge, and dies of exhaustion, or suffocated by the quantity of matter which he is unable to expel by coughing. There is No REMEDY for the disease, and though the cough may be alleviated by the ordinary expectorant balls, the disease, nevertheless, runs its course. It may be possible to postpone the fatal event for a time; but as the powers of the horse are always so much reduced as to prevent his working, it is quite useless to attempt any such treatment, which in man can only be justified by considerations founded upon other motives than those which concern the comfort of the individual.

CARDITIS, OR INFLAMMATION OF THE HEART, is also not unknown in the horse; but its symptoms are too obscure for the sportsman to be able to detect. It is followed by DROPSY OF THE HEART, or enlargement, called HYPERTROPHY.

SECT. 4.—INFLAMMATION OF THE ORGANS OF NUTRITION.

GASTRITIS is almost unknown as a separate disease in the horse, except as the result of poisoning. ARSENIC, wilfully given, is the most common poison, because it may be administered with the food in consequence of its freedom from any disagreeable flavour. CORROSIVE SUBLIMATE is sometimes the cause of inflammation when used as a wash for mange; and YEW is the only vegetable poison which is likely to be selected by the horse as food, either by itself or when cut and dropped among the grass upon which he is feeding. The castor-oil drench, No. 13, should be given with plenty of liquid in the shape of gruel to work it off, whether one or the other of these is the particular poison. If arsenic has been administered in large quantities, the stomach-pump should be used; but its application in all cases should be left to the regular veterinary surgeon.

STOMACH STAGGERS has already been described under the head of diseases of the brain and nervous system; for although the cause is in the distension of the stomach, yet the fatal effect is produced upon the more vital organ, the brain.

ENTERITIS, or inflammation of the peritoneal coat of the bowels, is common enough in the horse, and is a very fatal disease.

COLIC also is very common, and is a spasmodic affection, more or less complicated with inflammation, of the muscular coat of the bowels.

DIARRHŒA or DYSENTERY is a third kind of inflammation of the bowels, confined to the mucous membrane lining them. The symptoms of each are different, but as it is very necessary to distinguish between them on account of the variation in the treatment necessary, I have here inserted the symptoms in parallel columns, so that when there is evidence of something wrong in the bowels, the particular affection may be ascertained by comparing the symptoms of the three diseases.

Enteritis.	Colic.	Diarrhœa
Fever, with great restlessness, preceded by a shivering fit, and coming on gradually. Mouth hot and dry. Pain constantly very severe, and increased by pressure or movement; it is expressed by constant pawing, and striking at the belly with the hind-foot; together with groans Pulse quick, but small. Ears and legs cold; strength rapidly reduced; bowels costive.	No Fever; attack sudden, and not preceded by shivering. Mouth dry, but not hot. Pain very severe, but coming on in paroxysms, with an interval of entire ease between them. It is relieved by pressure or motion. Pulse full, and somewhat quicker than natural during the paroxysms, but at other times unaltered. Ears and legs of the natural warmth; strength not much affected; bowels costive. Horse rolls violently, and there is profuse perspiration during the paroxysm.	Slight Fever, with restlessness. Pain coming on suddenly, and in paroxysms, but not so severe as in colic. Breathing laborious. Constant looking at the flanks. Pulse quick and small, but not so much so as in enteritis. Mouth moist, and the legs and ears warm. Constant and violent purging, distinguishing it from colic, and also from enteritis.
Cause.—Sudden exposure to cold, either internally or externally.	Cause.—Drinking cold water after work. Green food given in large quantity without preparation.	Cause.—Strong physic, or the working horses too soon after it. Sometimes green meat will produce it when given too suddenly to the horse previously fed upon hay and corn.
Treatment.—Large bleedings; clysters of warm water and salt, or thin gruel, with half a pound of Epsom salts. Calomel and opium, of each half a drachm to one drachm every six hours. Bran mashes, and no corn or hay. Strong stimulating embrocation (No. 1) to be rubbed into the belly and flank.	Treatment.—The antispasmodic clyster (No. 5), with the drench (No. 6), followed by the anodyne ball (No. 5), every five or six hours. The stimulating embrocation and diet as in enteritis.	Treatment.—Give the anodyne drench (No. 7), followed by the ball (No. 6). Rice-water to drink.

Intussusception and Entanglement are peculiar mechanical complications of colic, which no skill can detect with certainty during life, and which no remedy will remove. In each instance there is a stoppage, caused by a kind of twisting—in the former case the one bowel slipping into the other like an inverted finger of a glove; and in the other, a species of knot of some kind being formed.

Calculi, also, consisting of hairy concretions, are occasionally the cause of stoppage, by filling up the calibre of the bowels.

Inflammation of the Liver is a very frequent disease in the horse, and is generally the result of cold. It comes on with fever generally, accompanied by diarrhœa, but sometimes the opposite state being present. There is great yellowness of the eyes and mouth; dark orange-coloured urine, sometimes almost red; great weakness and pain in the region of the liver. The disease is either acute or chronic; in the former case often proceeding rapidly to a fatal termination; in the latter taking a long course, and then ending in dropsy, or extending to the bowels. The Treatment consists in bleeding in the early stage, but not afterwards. The sides should be blistered, and for this purpose nothing answers so well as the ointment of the biniodide of mercury (see blister No. 6), which acts as a counter-irritant, and also specially upon the liver. The following ball may also be given every eight or twelve hours, according to the severity of the attack:—

Calomel,
Opium,
Tatar emetic, of each ½ to 1 dr.

If the bowels continue costive, a physic ball, No. 8, may be given in lieu of one of those just ordered.

Sometimes Jaundice occurs without much or any inflammation, either from some mechanical obstruction to the gall ducts, or from the torpid condition of the liver. In this case, the biniodide, rubbed in as above, is the best external application, with the purging-ball No. 11 every other night; or not so frequently if it acts upon the horse much. In a short time the liver generally acts, and if there is much weakness of the stomach, the alterative ball No. 9 may be substituted for the above, and the stomachic ball No. 3 or 4 given on the alternate nights.

Sect. 5.—Inflammation of the Urinary Organs.

Inflammation of the Kidneys is more common than is generally supposed, and produces great mischief, local as well as constitutional, when allowed to run its course unchecked. Fever is the invariable attendant, as upon most inflammatory diseases of vital organs, but here in a more marked degree than

usual. Next may be observed a stiffness and pain in the back, increased by turning in the stall, or by pressure on the back. This last symptom is common in strains and in rheumatism, but then there is no disorder of the urinary apparatus, and the water is natural and in good quantity; here it is scanty and high-coloured, occasioning pain in its passage, with great straining, caused by the irritation of the urine loaded with salts; pulse quick and hard, generally small and wiry. These symptoms are all present in inflammation of the bladder also; but the two may be distinguished by passing the hand into the rectum. and examining the bladder itself, when, if it is the seat of the disease, its pressure will give great pain, and it will be found thickened, and the parts adjacent hot and throbbing; whilst, if these are healthy, the kidneys may be considered to be the real seat of mischief.

THE CAUSE OF KIDNEY INFLAMMATION is generally mowburnt hay or musty oats. Kiln-dried oats appear to have the property of stimulating the kidneys. Exposure to cold and wet is another cause constantly occurring. The TREATMENT consists in prompt and active bleeding; blistering the loins (not with cantharides, which have a specially stimulating effect upon the kidneys), with the biniodide of mercury ointment. A purge is next to be given, followed by calomel, opium, and tartar emetic, of each ½ to 1 drachm every twelve hours. No diuretic should be given but plenty of lukewarm water, bran mashes, with boiled linseed in them. Warm clothing and flannel bandages are to be added to the other remedies, and cold draughts of air should carefully be excluded from the stable.

DIABETES, or profuse staling, is the result of improper food or medicines in most cases. At first the disease consists merely in an increased secretion of urine, the horse staling frequently, and passing a considerable quantity of pale and transparent urine, almost resembling spring water. After a time the horse becomes feverish, the mouth is dry, there is great thirst, with loss of appetite, and quick pulse; there is often the condition of skin called hide-bound. The CAUSE is from some error in the management, which should in the first place be corrected, and then the following TREATMENT will generally be of service:—

Opium, 1 drachm.
Powdered ginger, 1½ drachm.
Powdered yellow bark, 4 drachms.

Linseed meal and water enough to make into a ball, which is to be given twice a day.

If fever is present to any extent, or the horse is hide-bound, give

Emetic tartar, 2 drachms,
Opium, 1 drachm,

made into a ball with linseed meal and water, and given as above: and after a few days the following ball:—

Sulphate of iron, ½ ounce.
Myrrh in powder, 2 drachms.
Ginger, 1 drachm.
Powdered Calumba, 3 drachms.

Mix with linseed meal as above, and give night and morning.

The astringent drench, No. 10, may also be tried.

THE DIET should be nutritious, yet easy of digestion; and the horse should have from half a pint to a pint of lime-water mixed with each bucket of his water, which should be constantly left in his stall, so that he may drink it in small quantities frequently; whilst the taste of the lime will prevent him from taking too much at a time, and will also act as an astringent upon the kidneys.

SUPPRESSION OF URINE, in one form, is the result of inflammation or congestion of the kidneys, and, as the name implies, is evidenced by the horse being prevented from "staling." This, however, may arise either from the kidneys not acting, which has already been described, or from the bladder not being able to pass on its contents in consequence of spasm of its neck. Costiveness is a very frequent cause of this condition, and when this is present, the horse should be carefully raked with the hand, and a warm enema of gruel administered, to be followed by a laxative drench (No. 13), and afterwards, if the difficulty continues,

Nitre, 1 ounce,
Camphor, 1½ drachm,

made into a ball, and given every night. Warm bran mashes, with linseed, should be given, and no corn.

BLOODY URINE is the result of stone in the kidney or bladder, which irritates those organs, and causes them to exude blood. It should always have the aid

of a regular veterinary surgeon, as the health and life of the horse are at stake. An astringent ball (No. 9) has, however, been given among the medicines for the horse, because in some cases the aid of a regular practitioner cannot be obtained.

INFLAMMATION OF THE BLADDER is not very uncommon in the horse, and is either of the body or the neck. I have already alluded to the mode of distinguishing inflammation of the kidneys from that of the bladder, upon which the treatment will in a great measure depend, because when the kidney is affected, bleeding is of great utility, whilst in inflammation of the bladder it is seldom required, but the reliance must be placed upon anodynes and demulcents. The CAUSE is generally either stone in the bladder, or some peculiarly irritating condition of the urine; and, in either case, half an ounce of carbonate of soda, and some linseed, must be given with the mash two or three times a day. If the spasm is very urgent, give the following ball every eight hours:—

Opium, ½ to 1 drachm.
Camphor, 2 drachms.

Mix together with one or other of the demulcent drenches.

SECT. 6.—ORDINARY DISEASES OF THE SKIN.

SURFEIT consists in an inflammatory condition of the skin, in which small lumps make their appearance all over the body, but especially over the sides and shoulders. At first there is merely an elevation of the skin, which in horses whose coats are fine is very visible; but after a few days a scab forms, and in process of time comes away broken up into scurf, and often bringing with it a large proportion, though not all, of the hairs mixed up with it. It generally comes on in the hot summer months, and often after eating green meat or drinking cold water when warm from exercise. These should therefore be avoided with care on all occasions, especially as they are also likely to produce colic. The appropriate REMEDIES for surfeit are a mild laxative, repeated every fifth or sixth day (No. 9 or 10), followed by a few doses of nitre in a bran mash. Sometimes when the horse is very full of corn, and evidently in an inflamed state, bleeding may be necessary; but I confess I do not like the constant recourse to the fleam on all occasions, which is highly prejudicial to the constitution of the horse.

MALLENDERS consists in a scurfy eruption at the back of the knee-joint, which is occasioned by foulness of the blood, and requires alterative and cooling physic, and the application of the nitrate of silver ointment, or that of the superacetate of lead (see the astringent ointments, Nos. 15 and 16).

SALLENDERS is a similar eruption in front of the hock, requiring the same treatment as mallenders.

SORE HEELS are occasioned in the same way, aggravated by the water which is used in washing the legs and feet. When they are very bad they should be carefully dried on all occasions, and a little of the lead ointment, astringent No. 15, applied in all cases before going out into the wet. The horse also generally requires a little cooling physic, such as a physic ball, with an ounce of nitre in the mashes before it, as well as occasionally after the ball has "set."

GREASE is an aggravated form of sore heels, which usually occurs in hairy-legged cart-horses, that are kept in dirty and crowded stables upon beans, without a due admixture of good hay and bran. Sometimes the disease extends above the fetlock joints, and there is great swelling with cracks and ulcers in the skin, and a profuse discharge of a foul and offensive matter. The horse is lamed by the pain given in moving the leg, and he will only put it to the ground on compulsion. The TREATMENT must be both general and local; a smart purge will in all cases be necessary, often coupled with bleeding, and followed by the diuretic ball, No. 1, which may be given every other night. At the same time the local treatment must be as follows—first, remove all the scabs either by long-continued soaking in a bucket of warm water, or by putting on a bran poultice; secondly, apply a strong astringent in the shape of an astringent powder, No. 12, or the sulphate of copper wash, No. 14, which may be applied with a sponge or a paint-brush; and, when dry, the following ointment may be rubbed in:—

Venice turpentine, 1 ounce.
Powdered alum, 1½ ounce.
Lard, 5½ ounces. Mix.

Exercise must be given by walking the horse out in dry weather; and plenty of hand-rubbing to the sound parts will give tone to the neighbouring vessels. Sometimes grease is the result of debility, and then, instead of the diuretic ball, it will be better to give one or other of the tonic balls, of which the last, containing arsenic, is the most likely to be beneficial; but its administration is attended with some little risk, and it is scarcely safe for any one but the regular practitioner to give it, except in cases of which the result is of little consequence.

Sect. 7.—Inflammation of the Feet and Legs.

Fever of the Feet, which is the horseman's name for inflammation of this part, is a local affection, coming on from a variety of causes, as, for instance, over-riding, or from severe cold, or sometimes as a sudden change from severe inflammation in other parts. The most common cause is hard riding or fast driving in hot weather, and over hard roads, which will produce such an excessive reaction in them as to lead to inflammation, and sometimes a shedding of the whole of the insensible horn, or "casting of the foot," as it is termed. Sometimes, however, on the abatement of acute pneumonia, or some similarly important disease, the feet are suddenly attacked by inflammation, just as if they had been ill-used in work. In order to understand the nature of these various diseases, and the parts to which reference is made, the anatomy of the foot, given hereafter in the article "Shoeing," must be carefully studied.

The Symptoms are as follows:—There is first of all great fidgetiness of the forelegs, with frequent shifting of them, but no pawing, which would increase the pain. There is some fever, more or less according to the cause, with quickened pulse. The attitude is very peculiar soon after the commencement of the attack, where, as is generally the case, the disease is confined to the fore-feet. The horse bears nearly all his weight upon the hind-legs which are brought under him for that purpose, while the fore-legs are extended before him, and merely serve to balance him, and to carry a small proportion of their usual burden. In the next stage the horse lies down, and refuses to get up again; but there is a long struggle with his fears before he summons courage to bring the fore-feet back preparatory to lying down, in which the weight is taken by them. On examining the feet with the hand they feel decidedly hot, and if one only is affected, the difference between the two is easily perceived. If rapped smartly with a hammer, with such an amount of force only as would not affect a sound foot, the horse shrinks, and draws his foot away, evidently suffering pain; or if the toe is pinched with the smith's pincers, the same mode of expressing pain is exhibited; at the same time the artery running down between the bone and tendon on each side the pastern will be felt throbbing more violently than usual.

All these symptoms mark the disease, which should be treated as follows:—Bleeding is required as for all active inflammations of important parts, but it is best effected from the toe itself, by which the advantages of local as well as general depletion are obtained. If one foot only is inflamed, then bleed from that toe to the extent of a gallon and a half; or if both are affected, then take three or four quarts from each, in the manner described under the operation of Bleeding; after this the shoe must be lightly tacked on, and the whole foot and leg, up to the pastern, should be kept constantly wet, either by means of a bran poultice or a large sponge, or the sandal made on purpose. Moisture is necessary to soften the horn of the hoof, in order to allow the inflamed parts to expand; and the low temperature is required to reduce the inflammation. Ice is of great service, if it can be constantly applied; but if only for an hour or two, with an intermission during the night, it does more harm than good. It should only be applied when the inflammation is high; but when that is the case, and the foot is very hot, a lump or two of ice *constantly kept in the poultice* will be of great service. If the feet are only so far inflamed as to admit of the horse easily standing on them, a smart aloetic purging ball with calomel (No. 11) will be required; but if the feet cannot bear the weight, either the bowels must be left to themselves, or a mild ball only, such as No. 9, should be administered; after which the calomel, nitre, and opium ball, febrifuge No. 1,

may be given night and morning. If the feet are not less painful by the following day, two or three quarts more blood should be again taken; and this may even be repeated a third time to the extent of half this quantity; for though large bleedings are prejudicial to the horse, yet he had better be weakened severely than lose his feet for all useful purposes, which he will do if not speedily relieved in acute cases. In such cases as these ice is of the greatest importance; and if it cannot be obtained, a refrigerating mixture composed of nitre and sal ammoniac in equal proportions, of which two ounces are to be dissolved in two quarts of water, and used *at once* as a lotion, or for wetting the bran poultice. When the heat is somewhat subdued—that is, after two or three days—the coronet may be blistered, taking care to guard the hoof by rubbing it over with plenty of some sticky grease—as, for instance, resin ointment—and to put a cradle on the horse. Low diet, consisting of bran mashes or green meat, should be substituted for the corn and hay on which he has been living; and great care is required in the progress of the cure not to move the horse too soon, as exercise when the laminæ of the foot are still inflamed is highly prejudicial to the removal of the mischief almost invariaby left behind. The hoofs are very often shed, the separation beginning at the end of a week or ten days from the time of the occurrence of the attack, and generally going on gradually till, at the end of three weeks or a month, or even still longer, the whole comes off, leaving the sensible laminæ covered only by a very thin and tender layer of an imperfectly formed horn; in process of time this grows out and hardens, and a new foot is the result, but generally rather smaller and weaker than the original. Yet in some few cases, I have seen a set of useful feet reproduced, and the horse able to do good work afterwards for a series of years. This, however, is the exception, and I should never calculate upon it, knowing that in nine cases out of ten the foot is small, hard, and brittle, and there is no expansion of the frog to allow of the proper action on the ground. It is always therefore, very questionable whether it is worth while to treat a horse when thus attacked, with the slight chance of perfect recovery.

Chronic Inflammation of the Feet is nearly as unmanageable as the acute, and when thoroughly established it is quite incurable, as in that form called "navicular disease." Here there is chronic inflammation, generally accompanied by ulceration of the cartilage covering the navicular bone, or the coffin or pastern bones. Sometimes this state has ended in absolute bony union; but the disease seldom advances so far as this. It may be known by the tender, feeling step of the horse; by his refusing to trot boldly with his heel on the ground; by his pointing his toe forward when at rest; and by the frequent absence of all alteration of form in the foot. The inflammation is not always in this bone, I have very little doubt, but wherever there is a tenderness of the foot, as shown by the want of power to bear the pain consequent upon its use; and when there is neither contraction of the foot, nor corn, nor thrush, nor ring-bone, nor, in fact, any evidence of any other mischief, the horse is usually said to have "navicular disease." Hence, it is generally rather by the absence of other diseases that it is recognised than by the presence of any symptom which, during life, will suffice to fix its seat. After death, on dissection, the knife often exhibits the traces of disease, in the shape of ulceration, &c.; but during life no examination, however careful, will reach the small extent of mischief which is in existence. There is very little to be done in the way of treatment for this affection, and nothing but "nerving" offers much chance of benefit. This has been tried in numberless cases, sometimes with success, but more often with the contrary result. Nerving itself is described under the chapter on Operations; but its effects must here be considered. In navicular disease it appears too often to increase the mischief; but in simple contraction, depending upon the want of use of the feet, it will often induce the horse to employ them, and thus remove the cause which has all along been keeping up the effect.

Contraction of the Foot consists in a deficiency of frog, sensible as well as insensible, producing such an abortive proportion of the hinder part of the foot as to give it a narrow appearance.

But narrowness is not necessarily contraction; there may be a long, narrow foot, formed like that of a donkey, yet with a good frog, and as sound as a bell. I have had horses with feet of this character, which no rattling on the road could lame, even during long series of years, whilst others, apparently possessing good open feet, have speedily become altered in shape, and have in exact proportion to this alteration lost their soundness and freedom from pain. If a horse is suddenly put to hard road-work in the summer time, his feet, for want of seasoning, become inflamed, sometimes to such an extent as to produce acute disease, at others to lead to the navicular lameness, and in a third set of cases to that chronic condition of the sensible frog, and laminæ of the foot, which ends not in contraction of the heel, but in a wasting of the secretion poured out by these parts, namely—the insensible frog and its adjacent parts, the heels. A narrow foot, however, must always be regarded with suspicion, for if there is a want of due proportion in its parts; if the frog is small, shrivelled, and wasted, and the bars are weak and undeveloped, assuredly the foot is diseased, and the horse will be incapable of using it long upon hard roads, if he has not already lost its action. On the other hand, if both feet are exactly alike, and the hind-feet are also narrow and donkey-like, if the frog and bars are as fully developed as the rest of the foot, and if the horse runs boldly upon hard ground, it may be assumed with a tolerable degree of certainty that the shape is natural to the individual, and not the result of disease.

In many cases contraction comes on from improper shoeing, but not quite in the way that is commonly supposed. It is said by most of those who attribute its occurrence to bad shoeing, that when the shoe is allowed to remain on for more than three weeks, the foot is bound within certain limits and cannot possibly expand, and therefore becomes contracted. But it is forgotten that in hundreds of cases, with every care, and with constant removals, the feet gradually assume the contracted condition, and often, apparently, the faster for the care which is bestowed upon them. I have seen vast numbers of feet become contracted in this way, and I am satisfied that the cause is a very simple one. In ninety-nine cases out of a hundred the shoe is made with the "seating," or bevelled surface, carried out to the heel, or very nearly so, instead of leaving fully half an inch of the web perfectly level for the heel of the foot to rest upon. Besides this defect, most smiths, and especially when shoeing horses for sale, make the shoe wider than the foot, whereby the heel is placed still more upon this bevelled edge than it otherwise would be, and the consequence is, that the horse is constantly standing and working upon a bevelled surface instead of on a flat one, and that surface has a tendency to drive the heels in. If one hundred horses taken at random are examined, it will be found that more than ninety are thus shod, with the iron of the shoe projecting nearly half an inch beyond the horny matter of the heel, by which, to a superficial observer, the foot appears open and the real condition of the heel is obscured. Now, if these shoes are removed, it will be seen that there is a large polished surface on the inner edge of the web, where the heel has been compelled to play by the weight being thrown upon the uneven surface on each side.

Much has been written upon the expansion of the frog in the descent of the foot, but it is all theoretical; and in practice it is the fact, that if a sound, open, and well-formed foot is shod with the web wide enough to take a level bearing from the heel, there is no polished surface seen when the shoe is removed in any part of the web; hence, the conclusion inevitably follows that, since the polished surface can only occur from the expansion and contraction of the foot under certain conditions, already specified; and since it does not occur in a sound foot properly shod, whilst it is always met with in the foot placed upon too wide a shoe, if also "seated" too far back, the contraction and expansion are connected with the improper shoeing, and not with the want of expansion of the frog. This conclusion has been forced upon me by the numerous instances in which I have had shoes removed after purchasing horses from a dealer's stables, where these wide shoes are invariably adopted, and in which the polished condition above specified has been very remarkable. It takes some

months, it is true, to produce the alteration; but nevertheless, though slow, it is sure, and if continued the horse is almost to a certainty made a cripple by the long-continued use of such a shoe. Corns are also constantly produced by them; but these we shall presently consider by themselves.

Suffice it then to observe, that contracted feet are produced by two causes; first, by chronic inflammation, ending in a wasting of the sensible parts of the foot, and in a want of proper secretion of horn, and consequent diminution of size in the foot; and, secondly, from the shoeing being conducted upon improper principles—that is to say, by placing the foot upon two sloping surfaces, each tending towards the frog; and this second cause acts the more strongly *in proportion to the frequency of the renewal of the shoe.* In the present day no shoes are nailed far enough back on both sides to affect the heels; and however long they may remain on, these are not affected, because if the foot grows sufficiently it will expand beyond the shoe, which then lies within the crust, and is imbedded in the sole, as is constantly seen in horses whose feet have been neglected. The want of re-shoeing is more likely to prevent contraction than to cause it; and though I am well aware that it is prejudicial to the soundness of the foot, it is not by producing contraction of the heels, but rather by injuring the sole, and preventing the proper expansion of the toe, which is as necessary as that of the heel.

THE REMEDY FOR CONTRACTED HEELS is to place the foot upon a flat web, or sometimes even upon one bevelled at the heel in the opposite direction to the seated shoe. With this I have succeeded in two or three cases in rectifying contraction to a degree which exceeded my most sanguine anticipations; and I am persuaded that in very many cases where the contraction has arisen from this improper use of the seated shoe, the use of the opposite kind of bevelling will be attended with benefit, and often with a complete cure. Only let the horse-master examine these wide shoes when taken off, and he will find this polished surface invariably attending upon it, that is, when the seating is carried out too far back; and then let him try the opposite plan, or the middle one of a flat surface, and he will soon find the benefit of the alteration. If the contraction is attended with inflammation also, the "clay-stall" should be used, either without work, or in the intervals of it. This remedy consists in procuring sufficient clay to make a layer of it, in the upper part of a stall, six inches thick, which is to be kept constantly wet with cold water, and the horse placed to stand in it for all but the necessary hours of rest. The feet sink into the clay, which hollow is immediately filled with water draining in from some of the previously made holes, and thus the benefit really derived is the same as from a constant standing in cold water, but in a mode which is readily applicable to any stable. And, in addition to this, the *pressure* of the clay may perhaps tend to force out the heels, and thus expand them, though I am rather doubtful upon this point.

PUMICED-FEET AND SEEDY-TOES are both of them the result of acute or sub-acute inflammation—the former of the sole, and the latter of the toe. After the laminæ of the foot have been seriously affected by inflammation, in which they have more or less separated from the horn which they secrete, they seldom are perfectly re-united to it in the first stage, and in the second they secrete an imperfect horn, which is cellular, brittle, and incapable of giving that elastic support which the hoof is intended to supply. The consequence is, that the coffin-bone presses through this spongy matter, and instead of being supported by its arch, it projects into a convex form, more or less, according to the extent of the disease. This is the PUMICED-FOOT. But sometimes the plates in front of the foot are more affected than those of the sole, and then they leave the horn instead of bulging into it, and the consequence is, that there is a space between the outside of the foot and the sensible part inside which is occupied either by a large cavity, or by spongy matter; and generally this runs a short way back into the sole as well; in either case constituting the form of disease called THE SEEDY-TOE.

THE TREATMENT of these two conditions is founded upon the fact, that the former can only be palliated, whereas the latter can be cured; and

the reason of this is, that the pressure cannot be taken off the sole while nature is repairing the injury. In either case, it would take from three to six months for the horn to be reproduced in such strength as to bear pressure; and, of course, during that time the animal cannot be supported in such way as to allow of the growth. Hence, the TREATMENT OF PUMICED-FEET can only be palliative, and we must be content to do what can be done by careful shoeing, and keeping them rigidly dry while in the stable. Two things are necessary—first, to keep all pressure off the sole while at work; and secondly, to take care that it receives some little weight in the stable; because if it has none, it will gradually project more and more, and will thus become worse instead of better. The pumiced-foot, therefore, should be shod with a wide, but *thin*, web, covering nearly the whole foot, or, at least, so much as to guard it against stones, and other convex bodies. Being thin, it raises the sole very little from the litter, and thus allows this elastic material to rise into the centre, and press lightly against the centre of the sole, whereby the increased convexity is prevented. A bar-shoe is bad, because it throws the pressure upon the frog, which is generally more or less affected; and leather soles will seldom afford relief in pumiced-feet, because they take the pressure off the crust, and throw it generally over the sole; and this is the case, whether they are used with the tow-packing or without it; for, in the first case, the tow acts as a means of pressure, and, in the second, the dirt of the road is sure to enter between the leather sole and the spaces left on each side the frog, and thus does more harm than the tow would have done. The plain broad web is therefore the best mode of treatment, with great care in keeping the foot dry, and avoiding too liberal a use of tar and grease. "The stopping" of the stable is too softening; generally speaking, there is nothing like leaving the foot without anything applied to it, except a little neat's-foot oil, just before going out in wet weather, which prevents the softening effect of the water in the roads.

IN THE CURE OF SEEDY-TOE a very different treatment is necessary; here there is a chance of perfect recovery, and, as the pressure can be taken off in the meantime, so nature generally restores the parts in such a state of perfection as will suffice for ordinary work. When the seedy-toe is discovered, the disease has generally been for some time in existence, and the new horn is formed under the old, but of a very thin and brittle character, and with a space between; the smith should now remove with his drawing-knife all but this new horn, taking away the whole of the toe of the hoof, including the spongy matter, if there is any, and only leaving the thin covering to the laminæ, which is firmly attached to them, and which has very much the wrinkled appearance of varnish dried in thick layers on an uneven surface, and powdered over with very fine resin; or like the new nail of a man's finger when it is growing up after the original has been lost, but somewhat thicker and rougher than this. When all has been removed, there is generally enough of the side of the crust to nail a short shoe on, and this should be done by means of two or three nails on each side, taking care to remove all projecting edges at the toe and heel, for fear of its being torn off; and then the toe should be well dressed with tar and tallow, mixed in equal proportions; and the horse should be turned into a loose box, with plenty of tan, but no litter. The tar should be kept constantly applied, and the shoes should be taken off and re-applied every three weeks, paring away the crust at the sides as it grows, and clearing off enough of the frog, and of the old sole, to allow the internal foot to keep its healthy shape. In process of time, the outer layer of horn grows down from the coronet, and re-invests the toe, and the inner one grows up from the laminæ covering the coffin-bone, and also from the sole; and when it has nearly arrived at its full growth, so that the shoe can be removed with safety, there is no harm in turning the horse out in a *dry meadow* with plenty of grass. Moisture interferes with the proper growth of horn; and hard ground, unprotected with grass, is likely to bruise the tender foot as yet not perfectly recovered. If, therefore, a meadow of the above description cannot be obtained, it is better to keep him in the box.

SAND-CRACK.—Different reasons are assigned for the distinctive name given to this kind of crack in the hoof, some

supposing that it is because it happens more frequently in sandy districts, and others that it is from the crack being only of a size to admit sand. The latter I should fancy is the more probable etymology, since I imagine there is no real foundation for the belief that sandy districts are peculiarly prone to produce the diseased condition which leads to sand-crack. The essence of the diseased condition consists in a secretion of horn, having the fibres strong enough in a perpendicular direction, but not interlaced transversely, so that, while it is as tough as ever in resisting the battering of the road, *till it bursts*, yet when more than usual stress is thrown upon it, it splits open, and is then quite incapable of bearing its load. A hoof thus liable to sand-crack will be observed to be striated from the coronet towards the edge of the shoe, while the oyster-shelled foot is generally more open to the pumiced condition already described. In the fore-foot the crack is generally in the inner quarter, beginning at the coronet and running more or less downwards; sometimes, however, it occurs on the outside, but very rarely indeed in the front of the foot. On the other hand, in the hind-foot the sand-crack is almost always in the front; the reason of which is that the heel of the fore-foot is exposed to the shock of the ground; but in the hind-foot the toe is the only part which strikes it with any force. The PREDISPOSING CAUSE often exists for a long time; but it requires a piece of hard work to develop the crack, and then the difficulty is to restore it even to its previous weak condition. In spite, however, of this pre-existing tendency, no horse can be considered unsound until the crack actually appears. It does not always occasion lameness, but it will generally do so when the horse is worked hard.

THE TREATMENT OF SAND-CRACK consists in cutting away the horn down to the bottom of the crack in a bevelled direction, so that no sand can lodge there and thus increase the mischief. At the point of the crack a small round hole should be drilled or burnt out, by which the crack is prevented from spreading. The next thing to be done is to bind the two edges of the crack together, which is generally done by tying tape or wire all round the foot; but a much better and more really useful plan is to drill two shallow holes into the horn on each side of the lower end of the crack, and then to screw very short studs into them, which are to be connected together by fine copper wire, laced from one to the other across the crack. The horn is too thin to carry this up to the coronet, but an inch below that part there is generally sufficient thickness of horn to screw in a stud about one-eighth or one-sixth of an inch, which will give sufficient hold for the purpose. After this is done, some gutta-percha is to be warmed, and moulded into the crack, covering up all the irregularities, and keeping out the water; and finally, the *coronet* is to be constantly stimulated with tar and tallow in order to hasten the growth of horn, and improve its quality, by making it more tough. Some months will always elapse before the cure is complete.

WEAKNESS OF THE FOOT is dependent upon an insufficient secretion of horn, and is often congenital, and wholly incurable. It is, however, generally manageable by careful shoeing; and for many purposes, with the aid of a good smith, horses with weak feet are more useful than those with feet of an opposite formation. In the first place, they are seldom liable to contraction; and in the second, they do not often contract navicular disease; but if not carefully shoed, they are very liable to suffer from being bound by the nails, or to become tender from uneven pressure, as upon the heels, or upon the sole. The REMEDIES for these peculiarities will be found under the head of SHOEING; merely here remarking that the growth of horn should always be encouraged by tar, and that little or nothing should be removed from the foot by paring when the shoes are removed.

CORNS occur at the heel of the fore-foot and chiefly on the inner one; and they are the result of the unnatural pressure thrown upon this part by the use of the shoe, which lifts the frog off the ground, and gives the heel the whole of the office which nature intended to be shared with the frog. In the unshod foot the weight is taken by the toe and frog chiefly, the sole and the sides of the crest, as well as the heels, bearing a very subordinate part when on level ground; but when the modern shoe is applied, the frog is

raised from the ground by the thickness of the shoe, and on a hard road it does not touch it, but the heels alone receive the concussion. Besides this cause, inseparable from our mode of shoeing, there is the serious error, too often committed by the smith, of either leaving too much of the horn between the bar and the crust, or of removing the bar altogether; or, again, the shoe may slip within the crust, and lie just upon a part of the heel which is peculiarly weak and liable to inflammation. The consequence of one or the other of these causes is, that a small quantity of blood is extravasated beneath the horn, just as in a bruise of our own nails, and there is immediately inflammation set up in order to get rid of it. Corns in horses are unlike our corns in their nature, being simply bruises of the delicate membrane beneath the horn; and they are evidenced by the colour of the horn, which is more or less stained with blood when pared by the knife of the smith.

THE REMEDY FOR CORNS is simple enough, and consists in removing the pressure by paring away the horn covering the seat of the corn, and thus preventing the shoe from touching it; but this must be repeated at intervals of a fortnight, because within that time the horn grows down to the level of the shoe, and again takes the pressure, so that the corn is sure to reappear. In this way they may generally be cured, though they will almost always return without constant care; and a foot which has once suffered from corns is always to be watched. When they are very bad, and the frog is sound, the bar-shoe is the best remedy, which takes off all pressure entirely, and allows the heels to recover their strength and full development; but the frog should be allowed to rest upon the bar, and not lie above it with a clear space, as I have often seen, and with a prejudicial effect, because the web of the bar-shoe is sure to lie upon the heel as it leaves the crust to bend across, if it is not raised from it by the frog. The smith, therefore, should so adjust the shoe that the heel is left sufficiently clear of the web to pass a straw between without injury to it. If, in paring out the corn, there is a decided effusion of blood or matter under the horn, this must be so far removed as to allow of the escape of the fluid, and then the ragged portions of horn are to be removed, whatever may be their extent, and one of the caustics, Nos. 14, 15, or 16, applied by means of a small piece of tow, which is to be left in the opening, and removed every day, after which it is to be reapplied.

THRUSH is an ulceration of the sensible frog, causing a secretion of very offensive matter, and generally showing it in the cleft, where there is a soft cheesy secretion, easily recognised by its peculiar smell, and covered up by ragged portions of horn, on removing which with the knife, the horny cushion is found to be much wasted, and sometimes the sensible frog is quite bare, and its ulcerations evident to the eye. Generally, however, this condition exists only at the bottom of the cleft, which cannot be reached by the knife without removing too much of the horn; and the treatment must be limited to the application of mild liquid caustics to this cleft, by means of tow dipped in them and pressed deeply into it. Thrush is caused by anything likely to produce inflammation, such as the irritation of urine, which in some stables is allowed to collect under the litter, and thus soak into the spongy frog. This is generally the sole cause in the hind foot, which is more subject to thrush than the fore; but in the latter it is often the consequence of inflammation and contraction of the feet, producing ulceration of the frog; while on the other hand, thrush itself, when caused by standing in foul stables, and long neglected, will, by its wasting the frog, bring on contraction of the foot. Horses at grass in wet meadows are very liable to thrush; and sometimes come up with all their frogs thus affected, though more frequently only with the hind ones diseased. It does not cause lameness, except in very bad cases; but there is always tenderness upon pressure, so that if the horse treads upon a stone he will often drop with the pain, and perhaps break his knees in consequence.

THE TREATMENT OF THRUSH in all cases should consist in first clearing away all the loose horn, and thus getting down to the seat of the disease, which is then to be cured by applying nitrate of silver, or bluestone, or chloride of zinc, in solution, according to one or other of the forms given at page 847. These are to be used by

means of tow dipped in them and well worked into the cleft, or, when the whole surface is ulcerated, by a piece all over it, and kept in its place by a bar-shoe, which in this case ought not to take its pressure upon the frog, but should be chambered there, and should be firmly bedded upon the heels. The bar-shoe, in this case is a protection to the frog, and the heels must now take the bearing which, in the case of corns, must, as I have already explained, be thrown upon the frog. By persevering in the use of these caustics, and by keeping the foot dry, the foul smell soon ceases, and healthy horny matter begins to be thrown out; and in process of time a sound frog is again produced. Thrushes ought never to be neglected, for they sometimes become quite incurable, in consequence of their continuing so long as to cause permanent mischief to the sensible frog; and sometimes the ulceration extends in the form of sinuses into the sole of the foot, or in the shape of canker, which must next be considered.

CANKER is an extension of thrush, or sometimes of a corn or bruise in any other part of the sole, so as to cause extensive ulceration, and consequent *fungous granulation*, which sprouts out, and sometimes makes its appearance through the opening left in the horny sole, or through the ragged portions of the frog, exhibiting a mass of red fungous growth of a shining appearance. It is more peculiarly the disease of the cart-horse, though sometimes it is met with in the neglected hack or harness-horse. It must be TREATED with great care by the skilful use of caustics, which at first must be of considerable power, such as the muriate of antimony, or the caustic No. 7, page 847, and afterwards by a milder form, according to the extent and severity of the disease. It is, however, very seldom that this disease can be successfully managed without the aid of a veterinary surgeon, and this should if possible be obtained in all such cases; because the application of remedies must be always in exact proportion to the amount of mischief, and if too strong, or not strong enough, the cure is imperfect, or even the case may be vastly aggravated.

SECT. 8.—INFLAMMATION OF THE BONES.

THE BONES OF THE HORSE are particularly liable to disease, much more so indeed than in any animal with which I am acquainted. This arises from the fact that they are more used than those of any other domestic animal, and also that they are more liable to abuse from the confinement and heat of the stable, which encourages the growth of bony matter, and leads to the various kinds of splents, spavins, ring-bones, &c., which are a constant source of uneasiness to the trainer and the horseman. The chief diseases of the bone to which the horse is subject are the following, viz.—first, a new growth of hard bony matter, from the side of a long bone, forming a lump more or less prominent, and called a splent; secondly, a growth of soft and spongy bony substance around the joints, especially the hock, which is apparently intended by nature to strengthen weak joints, but which generally acts in a deleterious manner, by giving pain, and occasioning lameness; and thirdly, a similar formation around the pasterns, just above the coronet, and resembling the spavin in structure, but called a ring-bone, from its shape and situation. Besides these three, we find occasionally, in other situations, splents, or exostoses, as they are called in scientific language, occurring, as on the cheek-bones, arm-bones, &c., and also the small bones of the knee united together by bony matter, in a manner similar to the spavin in the hock.

SPLENTS occur both on the hind and fore-leg, but much more frequently on the latter, and almost invariably on its inside. They consist originally of an inflammation of the membrane covering the bone (*periosteum*), as a consequence of which fresh bone is deposited on the surface of the natural bone, forming a lump usually of an oval shape, which is sometimes visible, and almost always, but not invariably, to be detected by a manual examination. When the purchaser examines the legs of the horse he is inspecting, he runs his fingers down to each side of the cannon-bone and carefully examines not only the sides, but the spaces, or angles, left between the bone and the suspensory ligament. Here is the only part where splents are likely to be

injurious, by causing lameness, which they do by pressing upon the suspensory ligament, or rather by receiving its pressure, and so occasioning severe pain in the action of the horse. If the splent is situated on the front or outside of the leg, it may always be considered to be the result of a blow—as, for instance, from a wall or gate on the shin in hunting, or from the blow of a stick or other body of a similar kind, on the outside. On the inside, or back of the leg, they are generally either the effect of a blow from the other leg of the horse "hitting" the cannon-bone where the splent is situated, or else from the strain thrown upon the inside by the peculiar formation of the fore-leg. But whatever may be the precise cause of splent, there can be no doubt that it very commonly occurs on the cannon-bone, or partly on that bone and partly on the inner splent bone, so as to glue them together, and thus apparently to aid in giving extra strength to the whole leg. Each splent-bone is furnished with a rounded extremity, fuller than the rest of the bone; and this must not be mistaken for a splent, as I have known happen more than once with theoretical horse-masters, who have found fault with horses as having splents merely because they had this natural termination to their splent-bones, which ought to be about the size of large peas.

But, to return to the manual examination of the leg, when the hand, in passing down it as before described, discovers a large bump on the side of the bone, clear of the tendon and ligament, and not in the way of the horse's action, it may be disregarded, unless very large and sore; but if this splent is close upon the tendon in the upper half of the leg, or upon the suspensory ligament in the lower part, there is always danger of lameness occurring; and more especially if it actually extends beneath either of these parts, and is partly obscured by them. Very often a splent exists so completely hidden by one or the other of these bands of fibrous matter, that it can only be felt when the leg is bent, and the tendon and ligament relaxed, in which position the posterior surface of the bone may be readily and carefully examined; after which being done by a person used to the business, there is little chance of the existence of an undetected splent. These exostoses almost always occur in young horses, and disappear as they grow old; and it is very rare to meet with a newly-formed one, or indeed with any at all, after ten years of age. The course of time therefore will almost always eradicate them if left alone; and so long as there is no lameness arising from them any interference is always to be deprecated. Numberless are the instances in which I have known splents go on for years without causing lameness, so long as they were suffered to remain unmolested; but no sooner were they treated by some ignorant person, who promised a cure, than they became inflamed, and lamed the horse for many months.

THE CURE can only be effected by rousing inflammation in them so as to cause absorption; but this action is always incapable of control, and when the fire is once lighted there is no knowing how far it will go. For this reason it is that I advise every one to let well alone, and not to tamper with an innocent disease which always works its own cure in time, if left to itself; but if the splent is really causing lameness it is time to interfere, and the best mode of TREATMENT is as follows:—In the first place, the horse should be cooled down a little by a dose or two of physic, and by mashes &c., with a loss of half his corn. Next, when the legs are cool, rub in some of the mercurial blistering ointment, No. 6, over the splent, previously cutting off the hair; this will cause the skin to swell and discharge, after which the arnica wash, at page 851, is to be painted on with a brush daily for a fortnight, or until the swelling of the skin is entirely gone, when the ointment may again be rubbed, followed as before by the arnica wash, and this routine being repeated until the splent is wholly gone; after which the horse should have nearly a month's rest, to get rid of all the inflammation; during which time wet bandages may be applied, and then the leg may be considered perfectly cured, though sometimes a degree of lameness will remain only to be removed by steady exercise and light work.

SPAVINS are somewhat similar in their nature to splents, but they occur in the hock only, and show themselves

in the inner side of that joint, just below the bend, where they exhibit themselves first in the shape of a small nut-like bony tumour, which gradually enlarges until it often assumes a size equal to more than half an orange. It is often asserted, as in the case of splents in the fore-leg, that spavin occurs in the inner side of the joint, because the smith is apt to raise the outer heel of the shoe with a calkin; but this argument will not hold water when we consider the numberless instances in which splents and spavins occur in these situations in colts which have never yet been shod. Thousands of well-bred colts are every year found to be spavined before they are even bitted, and in them therefore this cause cannot possibly be in operation. However, it is scarcely necessary for our present purpose to seek to ascertain the reason for this preference; suffice it to observe, that spavin need only be looked for on the inside of the hock; it must not be confounded with those bumpy yet sound hocks which are not unfrequently met with, in which the bony processes are well developed in all directions, and the outside as well as the inside of the hock are full of bumps and lumps. Spavin rarely attacks these joints, but occurs in small and neat-looking hocks, which are naturally weak and incapable of sustaining the shocks of the gallop or the leap. The disease generally, but not always, occasions lameness, which is very evident in first coming out of the stable, but which afterwards often goes off, to return again the next day. When a horse badly spavined is examined out of doors he will often walk soundly enough, but the moment he is trotted he refuses to put more than his toe to the ground, and sometimes hops on one leg, carrying the other in the air.

The Treatment of Spavin is by first lowering the horse as for splent, and then either blistering the inside of the joint, or firing it. A variety of remedies have been in vogue at various times for this affection; the one now the fashion is Major's British Remedy, said to be composed of sulphuric acid; but whatever may be its composition, it certainly acts as a powerful counter-irritant, and generally speedily accomplishes a reduction of the bony tumour, though not, as Mr. Major asserts, without pain. I cannot myself believe that it is more free from pain than firing, and I much doubt whether it is as permanently efficacious; but that it does answer the purpose no one can deny who has seen cases cured by its means. It produces a discharge from the skin, and in some cases blemishes the horse to as great an extent as from firing; but, in the majority of instances, with proper care, there is little or no loss of hair. When the disease is far advanced firing is the best remedy; and, as far as I know, it is the only one upon which reliance can be placed. With its aid I have known numberless spavins stand the shocks of the training-ground and the hunting-field; but after the usual half-remedies I have seen so many failures, that I should be unwilling either to try them myself or to recommend them to others. Blisters of any kind will remove the bony growth if repeated again and again, but none acts so well as the biniodide, as given at page 846. Nevertheless, I prefer the iron, though I should afterwards use the biniodide—the firing acting by reducing the inflammation, while the mercury produces absorption of the bony matter. Slow work is often of service, and the spavined horse will often derive material benefit, after firing or blistering, from a winter's work at ploughing, harrowing, &c.

Ring-Bone occurs, as I have already observed, just above the coronet, where it shows itself as a bony lump, at first being situated beween the coronet and the upper pastern bone, but soon extending upwards and downwards, and in bad cases implicating the joint above and below it. In heavy cart-horses it is a very formidable disease, and lames as many horses as spavin, or perhaps even more. In them it occurs more frequently on the hind-legs; but in lighter horses the fore-legs are more commonly the seat of the disease. The Treatment is exactly the same as for spavin.

Sect. 9.—Inflammation of the Joints.

General Remarks.—The joints of the horse are the seats of two kinds of inflammation—one the result of constitutional disturbance, and almost always of a rheumatic character; the other coming on gradually as a consequence of the battering of hard work. By disease of the joints I mean such

as occurs in those called "round-bone," "stifle-joint disease," "grogginess," &c., and not in those which are rather external to the joints than occurring in them, such as spavin and ring-bone. The kind of inflammation which occurs in the joints without work is generally of a rheumatic character, and comes on after catching cold from standing in a draught, or from a similar cause. It will be comprised under the heads of round-bone, stifle-joint disease, and enlarged knee: while the joints inflamed by work will come under the heads of staleness or grogginess, windgall, thoroughpin, and capped-hock and elbow.

ROUND-BONE DISEASE is not uncommon, though perhaps it may be more often located in the imagination than in reality. When a horse is lame behind, and there is nothing to show for it, it is often the case that the farrier fixes upon the round-bone as the seat of the mischief, just as in the fore-quarter he heaps upon the shoulder a variety of ailments which have a totally different locality for their habitation. When this bone, which is the head of the thigh-bone, with its ligaments, becomes inflamed, there is almost always more or less wasting of the muscles of the thigh, so that on looking at the horse from behind the two sides are not symmetrical, but the diseased one looks shrunken, and feels soft and flabby. The CURE should begin with rest and blistering, followed after a considerable interval by slow and steady work, which will often succeed in restoring the parts to a sound state, by compelling those muscles to act which have so long been thrown out of action from a fear of pain as to have lost their natural size, and consequently their full power. I have in this way succeeded in curing lameness in the round-bone of some years' duration, and the shrunk muscles have then been restored to a full degree of plumpness and firmness to the touch.

LAMENESS OF THE STIFLE-JOINT is very rare, except as connected with sprain or dislocation of the patella, accidents which sometimes occur, and the latter of which can seldom be managed without the aid of a veterinary surgeon, whose assistance in all such cases should be called in. Whenever this joint is diseased, or is the subject of accident, it may always be detected by the tenderness on pressure on the joint, and by the heat and soreness existing there. If there is sprain only, a few days' rest will generally set it to rights, together with the application to the adjacent parts of the embrocation No. 1.

ENLARGED KNEE sometimes occurs in the young colt from a weakened condition of the system similar to our scrofula, or from rheumatic inflammation of its ligaments. In the former case, time and good keep will be the most likely to restore it to a state of health; and, in the latter, the alterative ball No. 7, with the application of the biniodide of mercury, page 846, to the knee, taking care to avoid applying it to the back of the joint. When the inflammation is the result of a broken knee, or of a prick from a thorn, it must be treated as described under the head of Accidents.

STALENESS or GROGGINESS of the pastern-joints is always the result of hard work, the latter being only a higher and more extreme degree of the former. The course of inflammation is generally as follows:—After a series of hard days' work often continued for years together the fronts of the joints become thickened by the addition of fresh matter to the fibres of the ligaments, and a tendency to knuckle over as a consequence of the instinctive desire which the animal possesses to avoid bending the pastern back. For this purpose he stands with them as straight as possible, and often, when first he comes in from his work, he actually stands so far forward over his toes as to compel himself to lie down, for fear of falling instead. The joints are often thus drawn forwards, in consequence of the strain on the back sinews and suspensory ligaments; but the real grogginess arises from chronic thickening of the synovial capsules and the ligaments covering them, and sometimes even of the spongy heads of the bones. There is a considerable difference in the meaning given to this term by different writers upon the diseases of the horse; some including under this title navicular disease only, while others mean by it disease of the pastern-joints; and a third set describe under this title that shaking or "standing over" at the knee which I believe to be dependent upon inflammation of the foot, rather than of the leg. In

horses of high action, which bring their heels down upon the ground with great force, the back part of the foot, including the sensible frog and the attachment of the sinews and ligament, becomes greatly inflamed, and to such an extent as to cause the horse to stand over in order to relieve it, by rendering the tendons relaxed. No horse by this attitude can stand without using the extensor muscles just as much as, or even more than, he would do if they were quite straight; but though this set is not assisted, yet the posterior tendons or flexors are relieved greatly from their pull upon their inflamed attachments, and consequently the horse perseveres, thus rendering them slack. Such is my explanation of this "standing over," which is sometimes called "grogginess," and which is relieved by any strong counter-irritant which will make a diversion in favour of the tired and bruised heels.

Navicular disease has already been fully alluded to, and it now only remains to consider the stale or groggy joint, which is the result of severe work acting upon a healthy frame. In a diseased leg which has previously been affected, the effect is much greater than in a sound one, and the grogginess returns in a very short time, though apparently quite cured. Thus I have bought, and seen hundreds of others buy, horses apparently as fresh on their legs as when they were foaled, yet when put to work ever so gradually they soon exhibited the nature of their previous mischief, by relapsing into a state of roundness of the joints, which speedily incapacitated them for work of all kinds. When, however, it has been coming on during a series of years, and at last assumes such an aspect as to prevent further work, a few months' *winter* run, with mild blistering and starvation upon a short bite of grass, will often renovate the legs, and enable them to stand their work for a second period; seldom, however, nearly as long as the first. But when a horse suits his master, he will take some trouble to keep him at work; and though he cannot be expected to remain sound for many months, or perhaps years, yet the master must not complain if he is not always capable of keeping up his health under the pressure of work as severe as before.

WINDGALLS, THOROUGHPINS, and CAPPED HOCKS or ELBOWS, are all swellings of the synovial capsules. The first in the above list are confined to the capsules placed just above the fetlock-joints of the hind and fore-legs; the second, to those of the hock; and the third, to the synovial bag, situated on the point of the hock and elbow respectively. These synovial bags are for the purpose of lubricating the tendons as they pass over the joints, or else for affording synovia (joint oil) to the joint itself, as in the case of the hock. In the healthy state, when free from inflammation, the synovia is poured out in small quantities, just sufficient to oil the machine; but after very hard work, especially if it is long continued, nature is called upon to do more than this; and as is so often the case, she overdoes her part, and the sac secretes more than is useful, so that it is filled quite full of synovia, and bulges out in the form of a smooth round, or oval, swelling, on each side of the leg, in windgall and thoroughpin, and at the apex of the hock and elbow, when these parts are "capped." These swellings are always worse on the day after work, the sacs having been stimulated by it to secrete a more than usual quantity.

THE CAUSE OF CAPPED HOCKS and ELBOWS is seldom the same as in windgalls and thoroughpins, the former of these being usually the result of kicking, either in harness or in the stable, by which inflammation is set up in the sac, and the regular balance between the absorption and secretion of synovia is lost, so that it accumulates, and shows a large bag, unsightly to the eye, but otherwise of no consequence. No one accustomed to horses can mistake these swellings for any other disease, but to a tyro it may be needful to show how they may be distinguished. Thus, windgalls all round the four legs are not to be mistaken, because there is scarcely any other swelling which shows itself above each side of the fetlock-joint between the tendon and bone; and the only one which can possibly be mistaken for this disease is the ganglionic enlargement of the tendon, which will be presently described under the section devoted to the consideration of inflammation of these organs. Thoroughpin may possibly be mistaken for bloodspavin, which occupies the same situation on the *inside* of the hock, but is

not felt nor seen on the outside, which fact alone will serve to distinguish them. Bone-spavin is hard, while thoroughpin is soft; and when the bulging-out sac on the inside is pressed, it always makes that on the outside project firmly, or *vice versâ*, showing that the two communicate with one another; or, in fact, that they are mere projections of the synovial membrane, or bag, lying between the superficial and deep tendons.

THE TREATMENT of all these enlargements of synovial bags is the same, and should be strictly local, and of a cooling nature, aided by the pressure of a bandage. Rest will generally remove them, or very nearly so, especially if aided by cold lotions, bandages, or, in some cases, by blisters. Supposing a horse to be very much "puffed" all round—that is to say, supposing he has windgalls, the best plan, if they are to be entirely got rid of, is to cool him down by physic and bran mashes, and then, after taking away three or four quarts of blood, to blister him "all round" with the blistering ointment No. 1, or James's blistering ointment, or the biniodide ointment (see page 846). or either of the embrocations at page 849. James's ointment is much more rapid in healing than any other, and the hair generally comes on again within a month, whereas with the ordinary blister, or the biniodide, double that time will often be occupied. As soon as the blister is healed, and the hair is growing, calico bandages, dipped in either of the lotions No. 5 or 6, should be constantly applied; or if their expense be objected to, cold spring water, in which alum is dissolved, may be substituted, and will answer nearly, but not quite, as well. By keeping up this application of bandages, in six weeks or two months the windgalls will have disappeared, when the corn may gradually be restored, and walking exercise may be allowed; but the relief is only temporary, and the swellings generally return as bad as ever on a resumption of the old work. This plan is often adopted in making up horses for sale, and as it cannot possibly be detected, a great risk is run in all purchases of horses whose history is not known. I have many times known a horse so treated sold with legs as fine as the day he was foaled, but in a fortnight the windgalls were as bad as ever. The thoroughpin may be treated just in the same way, and will yield to the same remedies, to return exactly as above described. Capped-hocks and elbows, however, are much more difficult to remove, and, except very soon after they first appear, they are wholly beyond remedial measures. When quite fresh, however, cooling applications and pressure will do much towards their removal; but blistering and all counter-irritants only make matters worse than before.

SECT. 10.—INFLAMMATION OF THE MUSCLES AND TENDONS.

CHRONIC RHEUMATISM may very fairly be classed among local inflammations, whilst rheumatic fever, or acute rheumatism, has been placed among febrile diseases. In the horse, chronic rheumatism is much more common than is generally supposed, and many obscure forms of lameness may be considered to belong to this disease. Very often an old, or middle-aged horse, after a wet or cold day's work, comes out of the stable "as stiff as a poker," and scarcely able to walk, upon which his master fancies that he will be laid up with severe lameness for some months; but on consulting with his coachman the next morning, he hears that his horse is quite right again, and fit for work. The great peculiarity of these attacks of rheumatic lameness is their liability to shift and change, the horse on one day being lame in his near foreleg, and perhaps on the next refusing to put his off hind-foot to the ground. But sometimes the disease is persistent in one limb, though varying in degree; and here the horse always trots lame on one leg; but the difficulty is to find out the seat. If before, it is usually in the shoulder or arm; and if behind, in the muscles of the hip.

SHOULDER LAMENESS, when present, is often rheumatic, but in some cases it is the result of a strain; in either case, however, requiring the same treatment. Lameness from rheumatism may almost always be known by the horse *lifting* his leg, whether hind or fore, with difficulty; whereas in disease of the foot or lower part of the leg, he *lifts* it readily enough, but *puts it down* with great caution, and flinches when it is on the ground. The toe is also dragged on the ground in rheumatism,

which causes actual loss of action and power; whereas this dragging is never seen in the fore-foot from any other cause. In the rheumatic hip the same kind of defective action is seen, and the hind-leg is not brought forward with sufficient power or freedom.

The Treatment of Rheumatism consists, in every case, in rubbing in a stimulating liniment, such as the embrocation No. 1, which should be well rubbed in with the hand night and morning; or Major's synovetic lotion may be tried, which is said to relieve rheumatic stiffness in a marvellous manner. The horse's general health should be attended to, and his stomach set right by stomachic balls, if necessary, or the fever ball, No. 4, given every other night, will sometimes give relief.

Inflamed Tendons are ten times worse than rheumatism, inasmuch as they are generally more or less ruptured in texture, as well as inflamed. It should be borne in mind that all the tendons run in sheaths, which are lined by the synovial membrane, and lubricated by its peculiar fluid; and hence, when they become used too often or too long, or on too hard a surface, this membrane becomes thicker, and at last is often so much diseased as to project in the form of an oblong tumour called "an enlarged back sinew," which is very common in all horses severely galloped over hard ground. The back sinews of the fore-legs are liable to various degrees of injury from inflammation consequent upon work. In the most common form, the swelling projects backwards, and to a certain extent on each side; and in this form is the common precursor of "breaking down." The tendon loses its elasticity from inflammation, and the consequence is that its fibres give way, and the suspensory ligament, having to support the whole weight, also fails; and thus the fetlock comes to the ground. This, however, is the aggravated form of breaking down; the more usual degree being limited to such a partial rupture of the fibres as to cause a considerable swelling, and a total impossibility of putting the heel to the ground. But besides this tendinous mischief, which only comes on in the horse which has been galloped, there is another, frequently found in the roadster or harness-horse, and which I should call the "ganglionic tendon," being similar in its nature to the ganglia so common about the wrists of men and women. These consist of small, round, and smooth lumps upon each side of the back tendon of the fore-leg, close above the fetlock joint; they are always exactly alike on each side of the leg, and they vary in size from that of half a small walnut to half a hen's egg. They do not always occasion lameness at first, but sooner or later the horse affected with them becomes crippled in his action, and finally lame. I do not know that this peculiar enlargement has ever been described; but I have felt it so often in this situation that there can be no doubt of its frequent occurrence. It is the result of hard work, and is very difficult to remove; no blisterings or cold lotions seeming to have any power over it, nor has even the extreme remedy, firing, any power of dispelling the swelling; at least I have had two or three horses thus treated without removing it, though the leg has been free from lameness afterwards, whereas before the treatment it was very sore and unfit to stand work. The hind-legs are also liable to breaks-down in the same way as the fore-legs; but I never met with the same ganglionic enlargement as in the fore-leg. Down the back sinews of the hind-leg there are often enlargements of the tendon, but seldom to so great an extent as in the fore-leg, unless the tendon breaks down, when it generally gives way between the two pastern-joints.

The Treatment for all these tendinous enlargements must be by rest, cooling medicine, with bleeding and starvation in severe cases, and the application of cold lotions or ice in a bran poultice. When the leg has become cool, it is sometimes necessary to try either firing, blistering, or sweating, followed by cold bandages, or a run at grass *in the winter*. It is seldom that much good is done here without at least six months' run, after which the leg will often stand harness-work or light hacking; but severe work like training will seldom be borne, inasmuch as the elasticity is in great measure impaired. After cooling down, by physicking, &c., the firing-iron should be neatly run over the leg, and then a good dressing of blistering ointment applied. The horse may now be kept in the stable until the legs become stiff with the swelling, and then he may be turned out with a cradle on, secure from injury by the soreness and stiff-

ness of his legs, which prevent his galloping about. The blistered leg should be carefully kept greased, and if the weather is very frosty it is advisable to keep the horse in-doors, because a very low temperature sometimes occasions sloughs of the skin that are not unattended with danger. In some cases a charge is used instead of blistering, as described at page 847; and it seems to act very beneficially, especially in thin-skinned horses, where there is little benefit to be derived from the iron owing to the want of substance in the skin.

Inflammation of the Ligaments of the pastern-joints occurs, more or less, in all hard-worked horses, in which the pastern-joints become more and more round from this cause; and sometimes also the knee, when naturally weak and badly formed; but the most common form of this inflammation arises in the ligament extending from the joint of the hock downwards to the other bones of the tarsus, and which species of mischief is called "a curb." Many horses are very liable to this inflammation from a naturally weak formation there, and often the colt of one or two years old is attacked by the disease. When the hock is thus malformed, the *os calcis* forms an angle with the *cuboides*—and, in fact, with the cannon-bone itself; and the horse is then said to have "curby hocks," to which horsemen have an especial objection. But many horses with this angle have no real tendency to curb, because the ligament, "being big enough for the place," can support the strain thrown upon it, while in others perfectly straight, the ligament, being weak, readily becomes strained and inflamed, and the result is a large curb. It is considered an accident in many cases arising after a severe run or race, and showing itself in a very few minutes, where nothing could have been seen before; in horsemen's language, the horse "has sprung a curb." But by far the more usual mode is for the curb not to appear until after some hours, when, on going to the horse, the groom finds him lame, with a swelling behind the *os calcis*, in the "curb place," as big as half a hen's egg. The horse is almost always lamed, but he may nearly invariably be cured, though, in some cases, the attack of inflammation returns again and again, and the horse is rendered thereby of no use for anything but light hacking or harness work, for at heavy harness the weight which he has to draw is just as likely to bring on the curb again as galloping or leaping.

Curbs are to be Cured by cooling treatment in all cases first, for no inflammation should be locally combated without first cutting off the supplies, and then either firing the hock, and afterwards blistering it, or else applying some one of the numerous sweating liquids which have been at various times vaunted as infallible cures for curbs. Major's British Remedy is believed by many to have great power, yet I have never seen it used in this disease; but the mineral acids I have seen applied with good effect, and his is said to consist of sulphuric acid. Either of the mercurial blisters at page 846 will do as well as anything I know for curbs, though I confess that I rely more upon firing than either—especially if done "with a will," regardless of blemishes. Many people fancy that the mere running of the irons over a leg is sufficient, but, for my part, I like to see them used to as great a depth as the skin will allow. Entire rest should always be given, and at first the horse should not even leave his box. Two or three months will generally be required before the horse is fit for work, and then he should be very gradually seasoned to it. High-heeled shoes are very commonly put on, but as the disease is confined to the ligament, and as the shoe can only relieve the flexor tendons, I can see not the slightest use in this asserted remedial measure. In breaks-down, the shoe can scarcely be too high behind, because then it relieves the pressure upon the part affected, but in this case it has no such effect, and is wholly inoperative.

Sect. 11.—Inflammation of the Blood Vessels.

The Vein of the Neck in which bleeding is effected is sometimes obliterated by inflammation consequent upon the operation. It is of very little consequence, except at grass, when it impedes the return of blood from the head, and thus sometimes causes, or is said to cause, some species of fits.

Blood or Bog Spavin, is a varicose condition of the vein passing on the

inner side of the hock. This state is owing to the valves being broken down, by which the whole column of blood weighs upon the walls of the veins and distends them, as well as makes them so tortuous as to appear and feel like a bundle of worms. The veins, as they pass from below upwards, join together to form large trunks; and to prevent them from being burst or unduly distended there are inserted, at short intervals, valves of a most beautiful construction, which allow the blood to pass upwards to the heart, but prevent its regurgitating in the smallest degree. From some cause these valves cease to act, and the consequence is, either that this blood-spavin is established, or that a similar state of things occurs in the fore-leg, which however is not nearly so common.

The Treatment of Blood-Spavin is generally by blisters, repeated until they excite so much inflammation as to obliterate the vein; but, after all, there is no reliance to be placed, except upon some modification of the old practice of dividing the vein. Formerly it was the custom to tie and divide the vein above and below the tumour, and then to dissect out the whole of the mass of distended vessels; but this is unnecessary, and the same operation which is practised in the varicose veins of the human subject answers very well in the horse, though not unattended with danger. As, however, the horse with blood-spavin is unsound, it is very justifiable to incur some risk in his cure; and few masters would object to this if the amount of risk were properly explained; and it is only when a deception has been practised that they would have a right to complain. The operation is a very simple one, and consists in passing a needle beneath the vein and out on the other side of it, and then winding some silk or thread from eye to point until sufficient pressure is made to obliterate the vein. After two or three days, according to the amount of inflammation produced, the needle may be withdrawn, and it will be found that the blood ceases to pass downwards upon the cells of the blood-spavin, and it gradually shrinks. If, however, it communicates with more than one vein, they must all be treated in the same way, keeping in the needle as long as the inflammation will allow.

Varicose Veins in the fore-leg are also sometimes met with, of which I have had one remarkable example in my own stable, in a well-bred mare. She served me as a splendid hack-and-harness mare for ten or twelve years, and then became troubled with these varicose veins, which came on after great inflammation, caused by a prick in shoeing; after a time the whole of the veins around the coronet and up the sides of the fore-leg were filled and tortuous, and their valves became obliterated, so that she was obliged constantly to stand in bandages; and though she could do pretty severe work every other day, yet on the day after work she was always dreadfully lame; and so she was after standing still at any time for half an hour without her bandages. I tied the veins in the way I have mentioned, and for some time she was quite right again; but in process of time the new veins became broken down in the same way, and she was again comparatively useless. I intended to have fired her, but she was so injured by an accident that I was obliged to destroy her.

CHAPTER III.

DISEASES ACCOMPANIED BY WANT OF TONE.

Sect. 1.—Worms.

The Symptoms of Worms in the Horse are not very clearly marked, but their existence may generally be guessed from the following signs. The horse stares in his coat, with an obstinate refusal to lay on flesh; his dung is partly lumpy, and the other part composed of mucus or loose *fæces;* and there is always at the anus a small pendent string of straw-coloured mucus; or if not hanging, yet smeared upon those parts, and generally appearing as a dry powder of a pale straw colour. A

husky short cough is also a very common symptom of intestinal worms. When these symptoms are seen, a common physic ball may always be given, which will generally bring away some one or more of these parasites, and the treatment will then depend upon what makes its appearance.

The varieties of parasitic worms in the horse are not very great, being however composed of four species, as follows :—

1.—The Bot-Worm is the larva of a species of gadfly (*Œstrus equi*), which, in the end of our summers, torments horses at grass very sadly. The egg is laid on the hair of the legs and sides of the horse, to which it adheres firmly by means of a glutinous fluid secreted by the fly. In the course of licking himself, the horse carries these eggs, or the young larva when first hatched, into his stomach by means of the tongue, and it is provided with a double hook by which it clings there, choosing the end which is provided by a strong cuticular lining, to which it may cling without serious injury, and where it remains until the next spring, when, being prepared to assume the chrysalis form, it is carried off with the food, and remains in the dung until it changes to the mature fly, in order to commence a new round of existence, by depositing fresh eggs. They do not appear to injure the health of the horse, and their presence cannot be discovered during life by any known symptom; indeed the most healthy horses, dying from accident, are often found to be infested by these worms in large numbers; and therefore it is assumed, with great reason, that they are wholly innocent, and that they may be allowed to enter the stomach in the usual way without fear of the consequences. At the same time I should observe, that some writers on veterinary medicine are of opinion that they sometimes produce great mischief by inflammation, and even by ulceration of the stomach; but they do not profess to be able to expel them by any known means.

2.—The Long Round Worm (*Ascaris lumbricoides*) resembles the common large garden worm, and is from six to ten inches long. These worms are not nearly so common as the last, but when they occur they are often in large numbers; and from their size and greediness of food, they consume a vast deal of that intended for the horse, and thus keep him thin and half-starved.

3.—The Needle-Worm, or Thread-Worm (*Ascaris vermicularis*), inhabits the rectum and colon, where they sometimes collect in large numbers, and even reach the cæcum. It is this kind of worm which causes the mucus to appear at the anus, where it sometimes assumes the straw-coloured appearance already alluded to, and at others shows itself as a dry powder between the thighs, but close upon the anus. They cause great annoyance to the horse from the itching they produce; and he will often stand and rub his tail or buttocks for hours against his stall-post.

4.—Tape-Worm (*Tænia*), is almost unknown in the horse, but occasionally one is met with.

The Remedies for these worms are chiefly calomel and other drastic purgatives, especially aloes, which will be found useful for the two species ascaris, in the dose and form given at page 853. The linseed-oil drench is also very useful for both forms; but for the needle-worm when very low down in the rectum, and occasioning much itching, an injection of the oil will be more efficacious than when given by the mouth. If the calomel and aloetic ball does not remove the worms, from 20 to 25 drops of oil of wormwood may be added to the ball with advantage; or a good dose of tartar emetic may be given as follows, it being the strongest and best vermifuge for the horse :—

Tartar emetic, 2 to 2½ drachms.
Powdered ginger, 15 to 25 grains.
Barbadoes aloes, 1 drachm.
Syrup enough to form a ball.

To be given every morning on first going into the stable. For tape-worm, if its presence is ascertained without a doubt, the following ball should be given twice a week, the first thing in the morning :—

Spirit of turpentine, ½ ounce.
Powdered ginger, 20 to 25 grains.
Linseed meal and boiling water enough to make a ball.

Sect. 2.—Indigestion.

Indigestion is often the result of inflammation of the stomach; but as

frequently it arises from the opposite condition, and will then come under our present head. In the horse especially is this want of tone the cause of the disease in question; he has a peculiarly small stomach, which is intended by nature to be frequently replenished, and yet it is often kept empty for many hours, as in the protracted day's hunting, when the horse is often from nine o'clock in the morning until late at night without even a drop of water, which the rider seems to think is unnecessary for the horse, though he generally contrives to get a glass of beer, or wine, or spirits for himself, "to keep the cold out." The poor horse, from this cause, is quite unfitted for his oats when he gets home, and even careful nursing, with gruel, &c., will fail to undo what the careless master has effected by his neglect of the common dictates of humanity. If the horseman only recollected that the human stomach is capable of fasting much longer than that of the horse, he would know that whenever his cries "cupboard," that of his horse cries out "manger" twice as loud; and he should take care, for the sake of his pocket, if for no other reason, to afford some kind of support to it. A pint of oatmeal may generally be obtained at country inns, or if not a piece of bread, or a quart of ale will be of service, and the loss of half an hour or less will always procure a feed of oats; but these waitings for the horse are not approved of in these days, and the poor brute must take the consequences, and suffer from flatulence and other signs of indigestion. When the horse is in this state he passes his food without extracting the proper nourishment from it, and both his oats and hay may be observed in his dung almost wholly unaltered, especially the oats, which will grow in the dung-mixen in rank luxuriance. This is very common in the horse, and arises almost entirely from his long fasts; for in those which are regularly fed it is very rare to meet with the disease. There is scarcely any animal which suffers so much from irregular hours of feeding as the horse; and one of the cardinal virtues in the groom is punctuality in his stable hours. The horse will tell his feeding-time as well as the best clock; and if he is accustomed to regular hours, he will show his impatience if the time is exceeded even by five minutes in a most unmistakable way, by pawing, whinnying, and looking round. When, therefore, this state is produced in this way, the first thing to be done is to remove the cause by carefully adhering to settled hours, and giving the proper food at the proper time punctually and strictly, without fail under any pretence whatsoever. Sometimes the secretions are depraved, or the liver does not act, in which case some one of the alteratives at page 842 should be given, the form No. 9 being generally the best adapted for the purpose. After this has corrected these functions, and there is a good flow of bile, which will be promoted also by green food, such as lucerne, carrots, or young vetches, one or other of the stomachic balls, page 852, may be administered every other night, and in a short time they will generally have the desired effect; always recollecting that unless the food is carefully given, no medicine will be of any avail. The oats should be kibbled, and the beans, if used, split. Half a pint of cold-drawn linseed oil, or a quarter of a pound of linseed simmered until soft, may be given with a small bran mash, and will often assist in strengthening the stomach by affording good food easily digested. But nothing is of so much service as a summer's run on good *upland* grass, which renovates the tone of the stomach, and the horse comes up fat and blooming, and fit for a year or two's stable management, or for a much longer term, if the care is taken to which I have already alluded. Soiling in-doors will do much; but when the legs and feet are good, turning out is *the* remedy for this state of stomach.

Sect. 3.—Washiness.

This is a state of bowels which arises from somewhat similar causes to those which I have already described, and is often co-existent with indigestion. The food being crude, and imperfectly prepared, is expelled from the stomach into the small intestines, which irritates and thereby causes the absorbent vessels (instead of extracting the nourishment from it) to pass it on in a fluid state. The same thing happens in the large bowels, and the consequence is that the food, instead of remaining in the horse about

forty-eight hours, or thereabouts, runs through him in less than half the time, and he looks a perfect skeleton, as a natural consequence. Such horses carry neither carcase nor flesh, and look tucked-up and wretched. They have no "middle pieces;" the circumference of the anus is so devoid of fat, that there is a sunken space all round it in which a small hand may be laid. This is a sign of weakness which should be carefully attended to, for no horse with this groove well marked is likely to "carry his corn," but will, in all probability, be "washy," and unfit for hard work, or to go through the labours of the hunter or the racehorse. The thighs of these horses are almost always a long way apart, from the want of muscular development; and for this reason, and also to examine the appearance of the anus and its surrounding parts, the horseman, before purchasing a horse, almost always carefully lifts the tail, and inspects him from behind.

THE TREATMENT for this state of disordered bowels is much the same as for indigestion, except that in addition such food must be given as will be likely to remain in him. Green food is not at all applicable, unless he is rested or turned out; and young vetches or lucerne are particularly bad—indeed no green meat should be given until its seeds are matured, whether grass, or vetches, or lucerne, all of which are liable to purge when unripe; and for this reason no washy horse may be turned out, except upon uplands where there is plenty of seeded grass; while rank aftermath and young spring grass are likely to be highly prejudicial, though I am bound to admit that I have known great good from young grass, after it had run the horse almost to death, when it seemed to alter the tone of his bowels, and give to him new flesh and strength. The anodyne ball No. 6, page 843, should also be given every night when the bowels are very loose, but, if possible, they should be managed by diet rather than by medicine. Baked wheat-flour will often act very powerfully, mixed with the oats, in the quantity of half a pint at a time.

CHAPTER IV.

SPECIFIC DISEASES.

SECT. 1.—MANGE.

THIS peculiar eruption is undoubtedly contagious, and appears to depend upon some animal or vegetable parasite, as in the dog; probably, as in his case, being made up of various diseases which have not been distinguished. It is usually an oozing watery eruption, with small vesicles, which break and deposit a fluid in the hair, causing it to mat into a solid cake. After a time the skin becomes dry, and there is a scurf instead of the oozing, and then the hair falls off in patches, leaving the skin scaly and rough, but greasy to the touch. There is considerable itching, and some thickening and tenderness of the skin, which ultimately becomes puckered and folded into furrows, at the bottom of which there is usually some little discharge. The eruption generally first appears near the mane, or along the back; and very often in the early stage, when it is doubtful whether a horse is infected or not, its existence may be confidently pronounced when the short hairs at the root of the mane come out with a very slight pull.

THE ORIGINAL CAUSE is generally neglect and dirt; but it is doubtful how often this creates mange without contagion, which operates as the cause in ninety-nine cases out of a hundred; no disease being more contagious than this, nor more difficult to eradicate from a stable when once it has broken out, which rather favours its vegetable origin; the seeds of all kinds of fungus being most difficult to destroy. We have no evidence of insect life being produced by poverty and neglect, though lice seem to start into life in a most extraordinary way immediately that the health is broken down

by long-continued fevers; still the eggs may be in existence, but the evidence is very strong here in favour of spontaneous generation. But, in the case of mange, it is seldom that it is started in a stable without the risk of contagion from some other horse, and it is commonly supposed to be incapable of being produced in any other way; but here the character of the attendant being at stake, it is reasonable to suppose that he will find out some cause for the disease other than his own neglect and inattention. When a horse is turned out into a straw-yard, or when he has been under the care of a waggoner or stable-keeper, and turns out mangy, it is easy to say that such and such a horse must have given the disease, because the responsible party in general was obliged to allow of that horse mixing with the infected one; and therefore he gladly throws the blame off his own shoulders on to the assumed original mangy one, although that may be wholly innocent of skin disease; or perhaps he may have had a simple surfeit.

The Treatment of Mange is partly constitutional and partly local; but, at the same time, measures should be taken to paint the surrounding walls, &c., of the stables retaining the germs of the disease. The constitutional treatment will depend upon the state of health of each individual. Some horses are mangy from contagion, and yet are gross in themselves and full of blood. These must be bled and physicked, and their corn should be reduced to such an allowance as will keep them neither too high nor too low in flesh; others, again, have been reduced by hard work, with insufficient food of bad quality, and foul stables improperly ventilated. These should be supported with tonics, good nutritious, but not heating diet, and airy stables. The following is the proper kind of medicine for each state of the animal:—

1.—For gross and overfed animals, give ordinary physic balls once a week, and in the intervals the alterative ball, No. 7, every night.

2.—For low-conditioned horses, begin by giving the alterative ball No. 7, and then give one or other of the tonic balls at page 853. The arsenic ball, No. 5, has obtained great celebrity in mange; and I have no doubt it is of great use; but it should scarcely be given without the superintendence of a proper authority in the shape of a veterinary surgeon. The local remedy should consist chiefly of sulphur ointment, as follows:—

Sulphur, in powder, 4 ounces.
Spirit of turpentine, 2 to 3 oz.
Lard, 6 ounces. Mix.

Or, Sulphur, and
Train oil, in equal quantities.

If these fail, the following wash may be tried; but it is of rather a dangerous nature, and it should only be used in extreme cases:—

Powdered white hellebore, 8 oz.
Water, 3 quarts.

Boil gently till the whole is reduced to two quarts, and then add.

Corrosive sublimate, 1 drachm.

This wash should be well brushed into the skin with a paint-brush, and no more should be used than will suffice to touch over the diseased parts. The measures to prevent the mange spreading are chiefly very great cleanliness in the stables, with sulphur fumigations. The whole of the boxes, stalls, &c., should be well scoured with soap and boiling water, then brushed over lightly with the wash prescribed above, diluted with an equal quantity of water. Finally, the whole should be made as air-tight as possible, and then a quantity of sulphur should be burnt in the interior, and the fumes allowed to remain in it for a whole night, or, if possible, for twenty-four hours. This will generally eradicate all the contagious matter, whatever it may be; and afterwards, if a coat of quick-lime wash is brushed over everything but the painted woodwork, there is little or no danger of any fresh infection.

Sect. 2.—Glanders.

This Highly-Contagious Disease is believed to be almost invariably incurable by any known means, and hence it is not here introduced with any hope of its cure, but solely that horse-masters should be able to recognise it, and when discovered, to prevent its being spread. The symptoms are—a yellow discharge from one or both nostrils, and a swelling of the glands under the throat. If one nostril only is affected, the

corresponding gland is enlarged, whilst the other remains in a healthy state. Sometimes the disease continues in this stage for many months, but, sooner or later, the discharge increases in quantity, and becomes green and very offensive, and the mucous membrane of the nostril becomes ulcerated, and the swollen glands harden, and attach themselves closely to the jaw-bone. It may be distinguished from the swelling and mucous discharge which accompany ordinary cold by the absence of fever, and by the continuance of the disease for a long period of time; also, by the swelled gland adhering to the jaw, which is a very characteristic symptom. The inflammation in glanders is of a chronic character, and there is little heat of surface. The ulceration of the mucous membrane is also peculiar to the disease, and never accompanies ordinary cold, in which, also, the discharge is almost always equally copious from both nostrils. From strangles it may readily be distinguished by the absence of suppuration in the glands, and by the hardness and adhesion of them to the jaw. Glanders, likewise, is the disease of old or adult animals, while strangles very rarely attacks any but young ones. In strangles, also, the mucous membrane lining the nose is intensely red, while in glanders it is only moderately so: the discharge likewise in strangles is profuse from the first.

The Cause of Glanders is almost always contagion; but in some few cases it appears to be generated, or rather to degenerate from common catarrh or strangles. Still it is very difficult to arrive at certain conclusions upon this subject, because, instead of degenerating, it may only have assumed the form of these milder diseases at first, and yet all the time have been true glanders. But whether it is so or not, it appears quite clear that many cases apparently of these mild diseases gradually become converted into glanders from some cause or other, and are then totally incurable. The point at which the change takes place cannot be defined; but the most experienced surgeons begin by pronouncing them cases of common cold or strangles, and end by asserting that they are true glanders; and the state of the constitution marks the alteration; the horse having become thin and haggard, with his coat staring and rough. Mr. Coleman relates a case in which several sound horses on board ship were obliged to be closely confined under closed hatches, in consequence of which some of them were suffocated, and the remainder showed unmistakable signs of glanders, although there was not the slightest reason to believe that they were inoculated with it by contagion. It is, therefore, reasonable to conclude with the majority of writers on the subject, that glanders is generated by foul stables, want of ventilation and overcrowding being generally the chief cause and origin of the disease. The essence of the disease appears to be an ulceration of the mucous membrane of the nostrils, which speedily contaminates the nearest lymphatic gland, and finally attacks the whole system, constituting the form called "farcy,"—to be presently described. The ulcers discharge a poisonous matter, which is capable of communicating the disease to other horses or to man, or if absorbed into the system, as it always is in course of time, it destroys the health with more or less rapidity, but with great certainty. But this matter must actually touch the mucous membrane of the sound horse, and no mere breathing will suffice to give the disease. It is by drinking out of the same bucket, or by smelling one another and rubbing noses together, or licking one another, that one horse infects another; and if the stalls were higher it would be carried from one to the other much less frequently than at present. But no one with any prudence would run the risk of keeping an infected horse; and the sooner such an animal is shot the better for all parties, since neither horse nor man is safe from inoculation, with all the care in the world; and in the latter case it is a frightful disease indeed, and one which no one is justified in risking under any pretence whatsoever.

Treatment seems to be wholly thrown away, though some few cases are recorded in which sulphate of copper given internally and applied externally to the nose, has apparently cured the disease. The Spanish fly is also said to have had the same good effect, but I know nothing from experience of these effects; and I should be very unwilling to try any experiments on such an intractable and loath-

some complaint. When the disease is established in a lot of horses, they had better all be destroyed, and the stable treated as for mange, described heretofore. The clothing should either be destroyed or well washed, and then baked; the wood of all the stable utensils should be painted, and the ironwork exposed to a red heat. These means will prevent it from being reproduced, and if proper cleanliness and ventilation are maintained afterwards, whereby the disease may be prevented from being generated, there is little fear of its occurring again; but if Professor Coleman's opinion is correct, that it is almost always generated, and consequently if the first attack was the result of filth and neglect, unless the management has been altered, it is scarcely reasonable to expect anything else but a repetition of the same disease occurring from similar causes.

Sect. 3.—Farcy.

By the term Farcy is understood the train of secondary symptoms which follow glanders; and, just as we see in the syphilis of man a primary sore occurring on a different part, followed by inflammation of the absorbents, enlarged lymphatic glands, and an eruption on the skin, so in the horse glanders begins as a series of primary sores in the mucous membrane of the nose, together with an inflammation of the lymphatic gland, or glands, of the throat; and when this state is followed by secondary symptoms, they receive the name of farcy, though the two diseases are the same, as is proved by inoculation. Mr. Youatt was of opinion, that the farcy-buds, as they are called, arise from the inflammation of the absorbents, at the situation of their valves, and in their course to the great blood-vessels of the chest; but this can scarcely be the case, because the farcy-buds almost always make their appearance first upon the lips and skin of the nose, parts which are more distant from the chest than the original ulcers, and certainly not on the line of any valvular absorbents. The fact is, that, as in syphilis, the matter is absorbed into the whole system, and is then deposited upon the surface, choosing, apparently, the most highly organized skin, in preference to that furnished with fewer blood-vessels.

The Appearance is as follows:—first of all small tumours arise, frequently in the course of the veins, but often in other situations, and as they grow they become hard, and suppurate; after which they burst, and discharge a thin watery matter; the sore presenting the same appearance with almost all poisonous sores, viz., a deep central cavity with a rugged, hard and elevated edge, and an unhealthy watery discharge. Sometimes the insides of the hinder extremities are affected equally with the fore-quarter; but more often the latter is the chief seat of the eruption, the inside of the arm, the tender skin of the brisket, the muzzle, and neck being thickly studded with farcy-buds and sores in all stages of progress. By and by, the deep-seated absorbents become affected, the ulceration extends deeply between the sheaths of the muscles and tendons, and even into the chest; and, at last, the whole cellular membrane and lymphatic glands become one mass of disease, finally wearing down the horse by irritative fever. This course is the regular one which will occur in most cases; but there are numerous exceptions in which farcy breaks out suddenly without any warning of these small and insidious steps; and the ulcerations run their course more rapidly than I have here described them.

With regard to the identity of the two diseases, there can, I think, be little doubt on the matter, when it has so often been demonstrated by inoculation that the matter of either will produce a primary sore in the shape of glanders, followed by secondary ulcers in the shape of farcy. The latter disease, when inoculated into the system of another horse, does not at once reproduce its own likeness, but only by means of a glandered ulcer of the nose, or of any other part in which it is inserted. If it is inserted in the skin, it is some time in breaking out into ulcers, and it does not always succeed, but *finally* the secondary symptoms appear just as if it were introduced into the Schneiderian membrane; hence, it is reasonable to conclude that the two are identical, and that the analogy with syphilis is complete. Farcy is distinguished from several

other diseases which resemble it by the following signs :—

FROM GREASE it may be known, when it attacks the legs, by the inflammation being less acute, though the swelling is often more sudden, but the redness and glossiness are not so great; also by the following symptoms given in the table below :—

IN GREASE,	IN FARCY,
There is generally some crack or evident appearance of grease, with ichorous discharge from the skin, and great redness and glossiness of it. The swelling is very great, but it is greatest towards the lower part, which is evidently the *fons et origo mali*. This attack is often called the "swelled leg," which is perfectly distinct from the ordinary *filled leg*.	There are always some ulcers irregularly circular, and with hard edges; skin not very red, or shining, but swollen and free from discharge. Great general tenderness, but no cracks in the heels; absorbents inflamed, and showing hard lines and knots in their course. The inflammation extends upwards, and the swelling is greatest above the hock.

FROM SURFEIT farcy is easily distinguished, by the absence of all ulceration in the former, and by the hair in it merely coming off, leaving a bare place beneath; the little lumps in surfeit are not so large as in farcy, except in the very early stage; and they come out over the body suddenly, while farcy appears a bud at a time.

FROM ANASARCA there can be no difficulty in distinguishing this disease, because in the dropsy of the cellular membrane there are no lumps, but an uniform swelling of the limb. There is a local œdema of the brisket, which is called WATER-FARCY, most improperly, being merely a sign of general weakness, from the vessels giving way in the most depending part of the body.

THE TREATMENT OF FARCY may be conducted upon more probable grounds of a cure than in the case of glanders —that is to say, if the horse is not so thoroughly infected as is sometimes the case. When glanders is detected early, it is usually a very virulent case, because trifling attacks of it are generally overlooked, and are suffered to degenerate into farcy before anything is done; and thus it is said that the farcy is often curable, while glanders is scarcely ever so. Now, when this is said to be the case by the very men who maintain their identity, there must be some extraordinary process of reasoning going on in their minds; but the truth is, as I have remarked, that whereas those cases of glanders which come under treatment are very severe ones, so they are difficult of cure; and in the same way farcy is seldom suffered to be developed from glanders when that was originally in a malignant form; and hence, by being mild, it is curable. Such I believe to be the explanation of the fact, which is universally admitted, that farcy is much more amenable to treatment than glanders—understanding by the assertion, farcy and glanders as usually presented to the veterinary practitioner; the former being seldom malignant, and the latter generally so. The cure is effected by local as well as constitutional means.

THE LOCAL REMEDY is the destruction of the ulcer or bud, either by the actual cautery (the budding-iron), which should be applied to every ulcer or bud so as completely to destroy it. The knife should first divide those buds which have not ulcerated, after which the iron will act more energetically upon them, and yet with less destruction of the surrounding skin; or the sulphate of copper should be freely rubbed into the ulcers, and made to destroy their surface. Arsenic and strong nitric acid, likewise, have been used with success, but their power is too great to be trifled with by the inexperienced sportsman. Whatever local remedy is used should be followed up wherever the bud makes its appearance, as there seems to be no tendency to heal without some destruction of parts giving a new and healthy stimulus to the fresh surface. The CONSTITUTIONAL TREATMENT is still more important than the local, and should consist of such substances as will cause an excessive secretion from some organ, carrying with it the poison of the disease; and this substance should be as little lowering to the horse as possible. Three such medicines are known, viz., mercury, arsenic, and iodine, all of which are paraded by their several advocates as certain cures. The bichloride of mercury (corrosive sublimate) is the form generally given, in doses of from 5 to 15 grains, dissolved carefully, and then added to a pint of gruel, and given night and morning. If arsenic is given, it may be administered according to the formula already given; and and I believe it to be by far the best remedy in farcy, and the least injurious to the horse. After a time the tonic

ball No. 4, page 853, may be substituted for it, and then the arsenic repeated again for three weeks or a month, so as to use the two alternately. But it is only as an experiment upon a horse which would otherwise be shot that I should ever advise the sportsman to use these powerful drugs without regular advice, as it will seldom happen that he will be able to calculate the proper dose, or to know when to push it, and when to hold his hand. Sometimes, however, such a case occurs as the one I have alluded to, and then he may feel justified in trying his luck; and if so, I would suggest his giving the biniodide of mercury as follows:—

Biniodide of mercury, 3 to 5 grains.
Linseed meal and water, enough to make a ball.

To be given three times a day. This I believe to be more likely than any other remedy to effect a radical cure of the disease. The dose may be increased up to 8 or 10 grains, with care; but the above will generally be found sufficient, and more safe than corrosive sublimate or arsenic.

Sect. 4.—Glanders in Man.

Glanders in Man is a horrible disease, capable of being inoculated from the horse when there is an abrasion of the surface. Numerous cases of this kind have occurred, all of which have been fatal when allowed to reach the stage of absorption. If, however, the inoculated sore is destroyed by the hot iron, or by lunar caustic or fused potass, there is very little risk of the disease spreading; and therefore the groom who has the care of a glandered horse, and who finds a sore on his arm or hand, should always consult a skilful surgeon at once, and follow his advice, if he prescribes any form of caustic, on the supposition that it is the disease we are now considering. When it has been absorbed there seems to be little chance of a cure, though there are one or two doubtful cases on record in which it is said to have been effected. At all events it is worth the trial, and the biniodide of mercury holds out the best chance of a cure, in doses of one-third of a grain three times a day.

Sect. 5.—Parasites in the Horse's Skin.

Maggots are sometimes found in the horse's skin, especially about the thick skin of the back, where they form hard lumps, which are often mistaken for surfeit lumps; but as they continue for many weeks, during which they slowly increase in size, they at last show their real nature, and when treated with a steady squeeze, come out of their snug nests. I do not know what insect they are developed into, but that they are larvæ is clear enough, and nothing but extraction will do any good.

Lice in the Tail are also a constant source of annoyance to the horse, causing him to rub the hair off it in a most disagreeable way, and disfiguring his appearance sadly. It may generally be known when these parasites are present by the tail being rubbed bare, while the quarters are untouched, or less rubbed than the tail; while in the case of irritation of the anus by worms, the tail is not so much rubbed as the skin covering the haunch bones. Turpentine poured into the root of the hairs is the best remedy, and one which will seldom fail. White precipitate may also be used if the turpentine fails to get rid of the lice, by rubbing it well into the roots of the hair; but the turpentine running readily into their crevices will generally answer better than any other remedy.

Body Lice are also sometimes found upon neglected horses in great numbers; for which the most effectual remedy is white precipitate, well rubbed into the whole surface, and a muzzle to prevent licking and biting.

CHAPTER V.

ACCIDENTS.

Sect. 1.—Strains and Breaks-Down.

Strains may affect either the muscles, joints, or tendons; and each of these three sets of organs are constantly suffering from them. Muscular strains consist of an absolute tearing of the fibrous tissue composing the muscles; or else of such an approach to a disruption as to have an equally prejudicial effect in producing lameness. In some cases the whole of a small bundle of fibres is torn across; but this is not the usual degree in which strains occur, and the most common amount of mischief is only a slight separation of a few of the very small fibres of which the bundle is composed; and this state is then generally spread over a considerable surface, producing much soreness from inflammation.

Tendinous and Ligamentous Strains are very similar in their nature, and consist either in an absolute tearing apart of these fibres, or such an approach to this as to cause great inflammation, and consequent incapacity for using them. Sometimes what is supposed to be a strain of the tendon is really an inflammation in its sheath, which causes great swelling and pain, and the limb is thereby rendered quite useless for the time being.

Strain of the Shoulder is generally a cloak for the ignorance of the groom or other attendant upon the horse; it being really a very rare accident, though often assigned as a cause for lameness which is really in the feet, legs, or knees. It is an inflammation of some of the muscles of the shoulder following violent strain, and generally confined to the serratus muscle which slings the body to the shoulder-blade, and which is sometimes strained in coming down from a high leap, &c. The symptoms are a dragging of the toe in the walk, with a deficiency of action on the trot, and a drop of the head while the affected leg is being extended, and not while it is on the ground; hence, when shoulder-lameness is mistaken for foot-lameness, the groom is apt to shift the blame on to the wrong foot. It may also be distinguished by laying hold of the affected leg, and drawing the whole *together with the shoulder* forwards, when, if the latter is affected, the horse will give evidence of pain, which he will not do if the foot or leg is the seat of mischief.

The Treatment for Shoulder-Lameness lies in rest, bleeding, purging, cooling-balls, with nitre, &c., as at page 849; and if it continues, the insertion of a rowel in the bosom. A cooling diet of green meat will also be needful, and all the corn should be taken away. After all the heat has disappeared, the horse may be turned loose into a box, and in another fortnight he may be walked out with a leading-rein; but it should be two or three months before he is again mounted. The embrocation given at page 849, No. 2, will in some cases afford relief after the first symptoms are gone off.

Strain of the Stifle is confined to the joint, which becomes hot and tender, and often swells considerably. The remedies are the same as for the shoulder; but a blister will often prove very efficacious, and may be used in preference to a rowel, and repeated again and again.

Strain of the Round-Bone, or whirl-bone, as it is termed by horsemen, is really confined to the hip-joint, which is often strained, but more frequently said to be so than really affected. It is very difficult to pronounce with certainty that this joint is strained, but sometimes the wasting of the muscles affords unmistakable evidence of the nature of the disease. Blisters and embrocations afford the greatest chance of relief; but when the wasting is very marked, and there is no evidence of present mischief, nothing but compulsory work will cure the disease. Light farm-work, such as harrowing, and the like, will often do more good than all the applications in the world; simply because the muscles have lost tone, and require the stimulus of necessity to make them recover their power.

Strain of the Back Sinew occurs in all the varied degrees from a slight strain to a breaking-down. When the sinews are merely slightly strained,

it is generally their sheath which is affected; but if there is very great swelling, especially after racing, the chances are that there is actual breaking-down of the fibres of the tendon or suspensory ligament, and often to a considerable extent. It is very unusual, however, for there to be an actual and entire separation, and the most ordinary condition is for the horse to come in from his race very lame indeed, yet without his fetlock touching the ground, and with only a partial separation of the fibres, so that if it were not for the pain he would bear his weight on the leg. In the worst cases, however, the fetlock joint actually touches the ground behind, and the leg is for the time rendered quite incapable of bearing any weight at all. There is generally some warning of this state of the tendon, which enlarges about midway between the knee or hock and the fetlock, and forms there an oval swelling. When this is the case, the chances are ten to one that an actual break-down occurs, although there may be no absolute lameness; but the inflammation is a sign that the tendon is in an unfit state for work, and that it will most likely give way in the next severe gallop.

The Proper Treatment consists in cooling *general remedies;* such as purging, bleeding if necessary, and the nitre and tartar emetic ball at page 851, or some one of the febrifuges there given. To this is to be added light food, consisting of bran mashes or green meat, without corn, and witl *entire rest.* Locally, cooling lotions are to be applied, and ice, if it can be procured in sufficient quantity. A bran poultice should be applied, with several lumps of ice in it; and as fast as they melt fresh lumps should be added. The poultice is best put in an old worsted stocking, which will hold a large mass of bran round the leg. In this way active inflammation may generally be speedily subdued, reducing it to the state in which strains of the back sinew usually appear; but, of course, the more complete the rupture of the tendon the greater difficulty of effecting a radical cure. But it should be known that these parts reunite, and that a broken-down horse will often recover the use of his leg for ordinary purposes; though he will seldom stand the severe trial which racing or training demands. After the ice poultice has been discontinued, or, in default of ice, the evaporating lotion No 6, page 851, may be constantly applied with a calico bandage: and at the end of three weeks or a month, when the leg is quite cool, it may be necessary to blister or fire the limb, or to apply a charge (see page 847). If the strain is very severe, nothing is so effectual as firing, followed by a blister. Next to this comes an ordinary blister with mercury (No. 3, page 846), or the biniodide of mercury (page 846). The charge is a good remedy after this last, as it prevents the horse from using the tendon too soon, and affords a firm mechanical support. The good effect of the arnica is also very considerable. In old swellings of the back sinews, consisting of an enlargement of the sheath, rather than a real break-down, the sweating embrocation, No. 3 or 4, page 846, will often effect an absorption of the swelling, and prevent further mischief; but it should not be used when there is any heat of the part, the cooling lotion being then the proper remedy. It should always be remembered that in strains, when there is increased heat of the leg, cooling medicines, low diet, and cooling lotions are the proper remedies; and that firing, blistering, and stimulating embrocations must be deferred until this treatment has had time to produce the desired effect. If the contrary plan is pursued, matters are only rendered worse than before, and a slight strain is often thereby converted into a serious mischief. This golden rule should be rigorously acted on by stablemen in all cases.

Sect. 2.—Broken Knees.

Broken Knees, like strains, are of every degree, from the slightest touch to the horrible wounds of the joint which sometimes occur when a horse is dragged over a flinty road, or falls over a heap of stones. These accidents, however, rarely occur, if we are to believe the assertions of horse salesmen who pledge their honour (!) to the fact, that each case has been occasioned by the manger, or by a stone-wall in hunting, if the horse has at all the appearance of that class of animals who are likely to be used as hunters. But, leaving the cause out of the question, it remains to consider what is best to be done when it unfortunately

happens that a particular horse has really touched his knee by a contact with the ground.

THE TREATMENT will depend upon the extent of mischief, which may be to one or other of the three following degrees :—First, if the hair and cuticle only are rubbed off, and the *cutis*, or real skin, is entire, the best plan is to give the horse a dose of physic, and bathe the knee night and morning with hot water, if there is any swelling, or to apply the tincture of arnica diluted with water, in the proportion of two drachms of the tincture to a pint of water ; then, when all the inflammation is gone off, which will usually be in a couple of days, apply Lieut. James's blister to the whole of the knee except the back, which is to be well guarded with lard, and this will bring off all the hair, which will be renewed, together with that covering the part rubbed off, in about three weeks ; and will almost invariably prevent any blemish, which is very apt to show itself if the blister is not applied ; for although the hair comes on again if left to itself, it is often of a different colour to that of the surrounding parts, and the critical eye distinguishes the blemish at once. Secondly, if the true skin is cut through so as to show the cellular membrane beneath it, but the joint itself is not exposed, a physic ball may be given as before, and hot fomentations applied if the bruise is very severe, or the arnica wash at once if there is only moderate swelling. As soon as the inflammation is abated, I should here also apply James's blister, because I have always found that the swelling caused by it contracts the wound, and that the consequent blemish is much less than would otherwise be the case. Indeed I have succeeded in this way in effecting *almost* complete cures of very large wounds of the skin, where a piece of it as large as a crown-piece has absolutely been cut away, besides more extensive abrasions of the cuticle around its edges. Such a broken knee would, in the ordinary way, have exhibited a permanently bare spot of the size of a half-crown, but by the above treatment the bare space was not bigger than a pea, and sometimes scarcely so large. After the blister has risen it must be carefully dressed with sweet oil, or lard without salt, sometimes called "fresh liquor ;" and when the wound on the knee throws out healing granulations *above the level of the skin*, they must be kept down to the exact level by touching them freely with a piece of bluestone every day. The whole art consists in causing the wound to contract by the swelling and stimulus of the blister, and in keeping down the granulations, or "proud flesh," as they are called, by means of the caustic. The groom, however, should carefully avoid touching these, unless they are above the surrounding skin, for below its surface they are useful and necessary to the healing process. Thirdly, when the joint itself is opened, the aid of a veterinary surgeon should be called in, who will decide upon the propriety or otherwise of destroying the animal. Sometimes there is only a small opening, which may at once be closed with the touch of a hot iron ; and at others there is a discharge of serum, which the uninitiated will mistake for synovia (joint oil) ; but in any case, it is better to have the advice of a competent judge of the injury.

SECT. 3.—KNOCKING DOWN OF THE HIP.

THE POINT OF THE HIP is often knocked off by the horse being cast in the stall or in the field ; sometimes by falling into a ditch in the dry summer weather, when the struggles of the animal will often break off the extreme point of the hip, especially if at all ragged, and then the muscles acting upon the broken portion to which they are attached drawn it down out of its place, and the hip is said to be "knocked down." After a time it does not much interfere with the ordinary action of the horse ; but I am not aware of any horse having been able to race after such an accident, though many otherwise likely colts have been thrown by, and used for the stud or other purposes, in consequence of its occurrence. Nothing can be done to relieve the horse, and time only will remove the lameness, which at first is often very considerable, from the bruises which the muscles have received, as well as the disruption of their fibres which must necessarily have occurred.

SECT. 4.—CUTTING AND OVER-REACHING.

BY CUTTING is usually understood the striking of one leg or fetlock by the other

foot; not including in this description the more severe and dangerous form of speedy-cutting, which will be described in a subsequent paragraph. Horses almost always cut from their legs being set too close together, or from their not bending them perfectly straight forwards in their action. Many horses, however, only strike their legs when first put to work, or when very poor, and leave the trick off as soon as they recover their flesh and strength. It is often at first a most difficult point to decide upon the exact cause of cutting; whether it is from the horse hitting his leg with the shoe, or from raised clenches, or from the foot itself being the offending body; but if the other foot is examined after trotting the horse in a rather dusty road, or if it is well covered with dry whitening, it may easily be seen where the horse hits himself, and how best to remedy it.

Very often the cutting is in the hind-foot, in which the blow is given by the shoe or hoof striking the other fetlock-joint, in consequence of the legs not being set on quite straight, and the fetlock bending too much; the joint is thus brought too near the middle line between the two. In this case the heels are to be raised, that on the outside having a "caulk" or "cog," whilst the inner one is raised to the same height, but without any projection, and presenting what is called a "feather-edge" in the language of the smith. This edge has no nails in it, so that not only is the heel raised without any cog, which throws the fetlock out of the line of the other foot, but there is no nail on the hoof to strike the opposite joint, and consequently it is doubly efficacious. The inside of the hoof should hang over the feather-edge very slightly, and be rasped very smoothly, so as to glide by the opposite joint without offering the slightest projection.

A Boot should be worn until the sore place occasioned by the cutting is quite well; and this should always be done whether the cutting is in the fore or hind-leg, because the swelling occasioned by the soreness projects into the line of action, and consequently the injury is constantly kept up without chance of relief; but if once the original mischief is got rid of by the use of the boot, there is a chance of the horse being able to do without it, and also ceasing to cut.

When the fore-leg is the seat of cutting there is much more difficulty in obviating the mischief, because it generally arises from a more awkward twist or distortion of the leg. Generally the cutting occurs in the horse which turns his toes out, and then there is often no remedy but a good boot, either of cloth, leather, or India-rubber. Sometimes, however, the cutting arises simply from the legs being set on too close together; and then it may generally be prevented by reducing the outer side of the crust, and also making the inside web of the shoe thicker than the outer; keeping it likewise free from nails, with a feather-edge somewhat similar to that described for the hind-foot. The horn of the hoof must be kept carefully smooth; and it also, as in the hind-foot, should project slightly over the shoe. In some cases a very plain and level shoe is the best remedy; but these are few as compared with those which are remedied by the raising of the inside web.

Speedy Cutting is the striking of the leg just below the knee, and chiefly in the gallop. It may almost always be detected by examining the part on the inside of the leg, close under the projection of the knee; when, if the horse "speedy cuts," some little scab or roughness will almost always remain, unless the horse has been put by for a long time, and kept to the walk and trot. No shoeing will remedy this defect, and the only relief is the boot made expressly for it, with a stiff pad extending up the leg to the knee. Without this the horse is always liable to fall, from the severe pain inflicted by a blow in the gallop, which will sometimes make him drop as if he were shot, to the great injury of the horse, and danger to the rider.

Over-Reaches are produced by the long action of the horse, when he is inclined to tread upon the heel of his fore-foot with the toe of his hind-foot. Such horses are generally deficient in the action of their fore-legs as compared with their hind-legs; and they do not raise the former exactly at the moment they ought, but delay until they are overtaken by the hind-foot, The Cure of the tendency to over-reach is partly to be effected by time and increasing age, as well as good riding, which sets the horse upon his haunches, and makes him pick up his legs more quickly, so as

to get away from his hind-feet. The horse which is inclined to over-reach may be known by his putting his hind-foot down eight or ten inches beyond the footmark of the fore-foot in the walk; and even in the trot sometimes nearly as far. He will in the latter pace generally "click," especially when tired; which noise is occasioned by the toe of the hind-shoe striking *the toe* of the fore-shoe, and never the heel as is sometimes supposed. When an actual over-reach occurs it is done in the gallop or leap, from the hind-toe dropping upon the heel of the fore-foot while it is sticking in deep ground, or in a hole or other inequality; and very rarely in the gallop on perfectly level ground, unless the horse is in great difficulties, and thrown out of his stride.

THE TREATMENT of the actual mischief arising from over-reach should be by the application of the tincture of arnica, of the full strength, which dries up the discharge, and prevents that peculiar inflammation of the top of the hoof which always has a tendency to run on into quittor. The horn, when the adjacent parts are inflamed, seems to poison them, and to produce an unhealthy discharge, which is very difficult to stop; and therefore it is a great object to dry up the wound, and get it to heal with a dry scab over it, which tincture of arnica effects; or bluestone, or gunpowder, which last is the old sportsman's remedy. If the over-reach is a very bad one, and the parts are much torn and bruised, the tincture of arnica, diluted as recommended at page 851, may be used as a lotion on a bandage; but in most cases, by gently brushing a little of the tincture into the wound, previously having removed all dirt, and then tying it up with a strip of calico round the hoof, so as to keep the parts together, and also to guard it from the dirt, the bruise heals without suppuration, and in a week or ten days the horse is again ready for work; but until that time he should be confined to a loose box.

SECT. 5.—QUITTOR, PRICKING, THORNS, &c.

QUITTOR consists of a sinus running downwards beneath the horn of the hoof, and occasioned by a blow or other injury of the coronet; or by some cause which has produced an abscess under the horn. It is, in fact, a sinus under the hoof; but those only are generally called quittor which depend upon bruises or wounds of the coronet; whilst those sinuses arising from pricks or inflamed corns are called "sinuses of the foot." In the former case a stimulating application, thrust in with a probe covered with lint, will generally cause adhesion of the sides of the sinus, and effect a cure. A strong solution of nitrate of silver, or chloride of zinc, is the best remedy (see page 847). If the sinuses arise from below, and break out at the coronet, an opening must be made in the sole of the foot wherever the prick or corn produced the mischief, so that the matter will always gravitate towards the bottom, and thus the sinus will heal at the top. The nitrate of silver will here also be a good dressing; or friar's balsam may sometimes be used with advantage.

PRICKS IN SHOEING are constantly occurring, especially in country districts, where the smith often drives three or four nails in succession before he gets one to come out at the right place; and the horse's flinching clearly shows the sensible part into which the nails have made their way under his wild blows. It often happens that the injury is not at once detected; but a day or two after shoeing the horse is evidently uneasy in his foot, and more or less lame. On removing the shoe it is found that there is great tenderness at some particular part of the foot, and sometimes a slight bulging; but this is seldom evident so soon. It is the better plan to place the foot in a cold bran poultice, without a shoe on, and wait for a day or two, when if the foot continues very hot, the smith must pare down the horn over the suspected place, and let out the matter if there is any; or, if necessary, bleed at the toe, which is likely to relieve the inflammation, and prevent suppuration, if it has not already occurred. If matter has formed, and is let out a little, friar's balsam is pushed into the abscess on a piece of lint, and the shoe tacked on; but the lint must be so left as to be capable of being pulled out on the next day, so as to leave a clear opening for the matter to escape. In a few days the shoe must be taken off again, and any ragged pieces of horn removed, as well as the opening enlarged, if necessary. The sinus may now be treated

as described under Quittor. Sometimes a prick occurs from a nail picked up on the road, and then the accident must be treated exactly as if it occurred in shoeing.

Thorns received into the skin in hunting are often very troublesome, and should be searched for most carefully when they are suspected to be present. The best way is to wet the leg thoroughly with hot water, and then to smooth the hair down slowly with the fingers, when the slightest inequality will be discovered, which in the dry state would be readily passed over. When the thorn is found, it may be extracted with a pair of tweezers; or sometimes it may be necessary to slit the skin up for a short distance, in order to reach the butt-end of the thorn, which should be removed entire if possible.

Sect. 6.—Fistulous Withers.

Fistula of the Withers arises either from a bruise of the saddle causing inflammation and abscess, or from injury received in rolling, either in the field or in the stable. The abscess has a tendency to burrow downwards, and the Cure can only be effected by making a depending opening, which will require the aid of the veterinarian, and I shall therefore not dilate upon their treatment.

Sect. 7.—Warbles, Sit-Fasts, Saddle, and Collar-Galls.

These are all occasioned by the pressure of the saddle or harness, and are generally easily managed if only the pressure can be kept off for a time. The lotion No. 6, given at page 851, is very serviceable in all these affections, and will generally effect a cure. Sit-Fast is merely a name for an obstinate and callous galled-sore, which has repeatedly been rubbed by the saddle, and has become leathery and disinclined to heal. If time can be allowed, there is nothing like a small quantity of blistering ointment rubbed on; or the application of a small piece of fused potass; or even the nitrate of silver in substance, or bluestone; all of which, will produce a new action in the part, and if followed by rest from the saddle will generally effect a cure.

Sect. 8.—Fractures and Dislocations.

These accidents in the horse can seldom be treated successfully, and never by any one but the competent veterinary authority. I shall therefore not take up space by attempting to *mislead* the sportsman into a belief that he can treat any such case in the horse himself.

CHAPTER VI.

MINOR OPERATIONS ON THE HORSE.

Sect. 1.—Bleeding in the Neck, Leg, and Toe.

Bleeding in the Neck Vein is performed either with a full-sized lancet or with the fleam; the latter only being used by grooms, or those who will be likely to read these observations, while the lancet is confined to the skilled practitioner of veterinary surgery. Besides the fleam, a blood-stick also is required, consisting of a piece of hard wood, generally loaded at one end with lead, so as to strike a very smart blow upon the fleam, and thus perforate the wall of the vein with certainty. The unloaded stick is the proper instrument, and it should only be struck with such force as to drive the fleam through the outer wall of the vein, and not to pass through both. The horse is blindfolded, or so managed by the aid of an assistant as not to see the blow; the hair is then smoothed down with a damp sponge, and then with the three unemployed fingers of the left hand (the fleam being held with the thumb and fore-finger) the vein is pressed upon below the place where it is intended to be opened, and raised prominently; after which the blow is given, and the blood flows, the previous pressure of the fingers being supplied by the edge of the

bucket which collects the blood. When enough blood has been taken, the lips of the opening are brought carefully together, and a common pin passed through, after which the sharp point is cut off, and some tow is wound round the ends so as to keep all together; in two or three days the pin may be removed. The horse's head will require to be tied up for a few hours, to prevent his rubbing the place.

The blood should always be preserved, that the *quantity* drawn may be accurately known, and its *quality* examined on the next day; when, if there is a yellow-cupped surface, called a "cupped and buffy condition" of the blood, there is evidence of inflammation, and the bleedings will generally require to be repeated.

BLEEDING FROM THE INSIDE OF THE ARM OR THIGH is sometimes practised, but here the lancet is the only safe instrument, and with it the vein is to be opened as directed for the dog.

BLEEDING FROM THE TOE is often required in diseases of the foot, and it is managed by the smith who removes the shoe, and then with a fine drawing-knife cuts down upon the vein which runs along the line of junction between the sole and crust. The bleeding may be made very profuse in this way, and it is stopped by pressure with tow, which is first inserted in the opening, and then kept in its place by tacking the shoe on again.

THE QUANTITY OF BLOOD DRAWN will depend upon the nature of the disease, and the strength and size of the horse; but it averages about a gallon in most cases. Too large and too frequent bleeding should be carefully avoided in all cases.

SECT. 2.—ROWELS.

ROWELS are inserted in the skin of the horse, in order to allay inflammation by exciting counter-irritation. Their insertion is effected by a "rowelling-needle" like a skewer, but sharp at the point; to this a piece of tape is attached, and pushed through the skin, which is previously raised by the hand of an assistant, and in this way a long track of inflamed cellular membrane may be caused so as to procure a very copious discharge, which may be increased, if necessary, by smearing on the tape the mild blistering ointment given at page 846.

SECT. 3.—RAKING.

When a horse is so confined in his bowels from the lodgment of hardened fæces in his rectum, as to be unable to pass them, the hand is well oiled, and introduced into the bowels, and in this way, lump by lump, it is extracted; and then a few quarts of warm water, or gruel, being thrown up, the whole bowel easily relieves itself.

SECT. 4.—SHOEING.

THE ANATOMY OF THE FOOT should be carefully studied by every one who attempts to superintend a smith in his work; and, in fact, even the smith himself should know something of the formation of this important organ. The foot is composed of three parts—first, of the bones, cartilages, tendons, &c., by which the general shape is maintained, and the limb moved; secondly, of a delicate membrane, by which the last bone is covered, and which serves to secrete the horn of the hoof; and thirdly, of the hoof itself, a dead mass, or shell of horny matter, which, in a state of nature, is intended to protect the foot from the friction of the ground, but, in our treatment of the horse, serves chiefly to receive the shoe which we nail to it, in order to guard against the excessive hardness of our roads, and very often the sharp flints with which they are mended.

THE BONES, &c., consist of the coffin-bone, at the extreme end, which is nearly of the shape of the foot, but smaller. This is attached to the lower or smaller pastern-bone, which also is partly covered by the upper part of the horn. It is very light and spongy, and is perforated by numerous small holes for the blood-vessels, which supply the *laminæ*, or plates, with which it is covered. It is moved by a tendon inserted before, and another beyond, by which the foot itself is raised and lowered again upon the ground. Around the exterior of this bone is a series of folds of membrane, of a half-horny character, but full of blood-vessels, and constituting not only a glandular apparatus for the secretion of the horn, but also an elastic bond of connexion with the horn itself. It is supposed that, in the usual way, these plates, by their attachment to the horn of the hoof, support the weight by a kind of suspension, and that the sole takes little

or none of it; and it is only in work that the sole descends upon the ground, and then receives some considerable pressure from it.

Beneath the coffin-bone is the sensible SOLE, formed in its upper part by an elastic substance, and below of a vascular one, which somewhat resembles the skin. It is placed between the coffin-bone and the insensible sole, as a means of diminishing the shock, and also acting as a species of gland in secreting the horny sole.

Behind and between the two divisions of the sole is the sensible FROG, which is a soft mass, of a spongy nature, partly also ligamentous in its character. In shape it corresponds with the frog, as seen from below, and it is attached to the coffin-bone and cartilages of the heels by numerous vessels, and nerves, and cellular membranes.

THE NAVICULAR BONE is placed behind and between the lower pastern and coffin-bones, forming a joint with both, and materially strengthening their union. It also receives some of the weight which is thrown on the lower pastern, and acts as a lever for the flexor tendon.

THE CARTILAGES OF THE FOOT project beyond and behind the coffin-bone, and add to its surface for the attachment of the laminated plates, and also of the horny matter.

THE HOOF itself is, as it were, a case or cast of the parts within it, and it consists of the wall or crust of the sole and of the frog.

THE CRUST, OR WALL, is that part which is uncovered by hair, and which is seen when the foot is on the ground. It is deepest in front, and should in a sound foot form an angle there with the ground of about forty-five degrees. If flatter than this, it constitutes the "oyster shell" foot; and if more upright, the foot has always a tendency to contract. This crust is in front about half an inch in thickness, gradually becoming thinner towards the heel, especially the *inner* one, and thicker towards the ground. The inner heel is also a little higher than the outer, and wears away more rapidly, from the friction of the road being greater there than on the outer side. Where the crust joins the skin at the coronet, it becomes rapidly thin; and this is called the CORONARY RING, which covers an expansion of the skin, called the CORONARY LIGAMENT. This is really no ligament, but is the glandular organ which secretes the crust, or the greater part of it, the inner layer being formed by the laminæ on the coffin-bone. A knowledge of this office leads to the application of remedies to the coronary ligament when there is a deficiency of horn, and not to the horn itself, which is dead matter, and incapable of doing anything to alter its own qualities. The inside of the crust is marked by deep grooves, being horny plates or projections, which fit into the corresponding laminæ on the coffin-bone already described.

THE SOLE is a concave surface of horn attached to the sensible sole above, and containing between its two portions the frog, to which it is connected by the bars at the hinder part. The bars are continuations of the crust, which bend inwards and forwards, and then lose themselves upon the frog itself. In the angle between these two portions is the place usually occupied by corns.

THE FROG is an elastic and insensible substance of a wedge-like form, with the point forwards, which is intended to give the horse secure foothold, and also to diminish the concussion with the ground. In the middle is a cleft, in which offensive matter is apt to accumulate and cause thrush.

THE PRACTICE OF SHOEING, for its due performance, depends upon several conditions, one of which is that the smith shall have some knowledge of the common laws of mechanics, and shall be able to adapt to his particular purpose the various expedients into which his materials are capable of being combined. This constitutes the chief difficulty of shoeing; for on a healthy foot almost any rude artizan can manage to nail a shoe.

The first thing to be done is to remove the old shoe, and carefully examine whether any alteration from the usual mode will be of service. The nails should first all be punched out after raising their clenches, and then the shoe will always readily leave the foot without the exertion of any improper violence. The next thing is to pare down the horn, if it is redundant, and to clear it out from the corn places, as well as to smooth off any ragged portions of the frog. When the foot is pared out (in doing which the smith

should carefully leave the bars), the shoe is next fitted on; here the smith may take advantage of its heat to ascertain its bearing, but not to let it form its own seat by the burning down the hoof, as careless smiths too often do. The slightest touch is enough for the smith to see what horn is required to come off, which he easily does with his knife; and in this way the shoe is soon fitted. I have already dilated upon the absurd system of shoeing the foot with a shoe wider at the heels than the foot, and I can only return to the subject here by way of a reminder, the reader being referred to the article "Contraction," under Diseases of the Foot, for further information. When the shoe is nicely fitted, it is next nailed on; and for this purpose three nails are generally used on the inside, and four on the outside. The nails are turned down, and then they are twisted off with the pinchers, and hammered down in their places, letting them into little notches which are formed for them with the rasp.

The Varieties of the Shoe are—the ordinary shoe; the concave or hunting-shoe; the bar-shoe; the tip or short shoe; and the plate or racing shoe, which is made of varying degrees of lightness, according as it is wanted for flat-racing or steeple-chasing. The three first also are made of varying strength and size; but all this must be seen to be understood; and the limits of this book will not admit of any minute description of the various forms of shoes, nor of that skilful adaptation by which the smith manages to avoid pressure upon diseased parts, by throwing the weight upon sound and healthy structures. Some horses cannot go at all in concave shoes, because their soles are so tender that the flat internal surface of the web pressing upon them causes great pain; and others, again, require some modification of the ordinary shoe, because their crust is too weak to carry all the weight. To these must be added the Charlier-shoe, to which I have drawn attention at page 839.

Leather Soles are often applied between the shoe and the foot, and are of great use in feet which are much battered, and especially when the sole is thin but healthy; but in pumiced-feet with convex soles they often do very great harm, and are not then to be tried with any prospect of success.

The Bar-Shoe is a complete ring of iron, which either receives the pressure of the frog, or takes all off it, acting then as a shield to that important part of the foot.

Plates are nothing more than very light rings of iron, with merely a groove in them for the lodgment of the heads of the nails. They are of little use, except to prevent the crust from breaking away.

Tips are short shoes put on the fore-feet of horses at grass, so as to prevent injury from the blows of the ground, and yet to allow the frog and heels to be in contact with it.

Frost Shoes, for enabling horses to get a foot-hold of ice, are either temporary or permanent. The former necessitate the removal of the shoes if the roughing is to last more than a very short time. For a mile or two, at a moderate pace, a few frost-nails inserted in the places of the ordinary ones will suffice, but for a greater distance the shoes must be turned up at the heels, which is the ordinary method adopted in this country. To avoid the loss of time attending on this plan, a screw cog or calkin is the best expedient, which may be called the permanent method, and then it is only necessary to have the shoes prepared with screw holes in the heels, when the cogs can be screwed on by the coachman or groom whenever the roads become slippery. This is doubtless a capital arrangement, but the smiths do not like it, and consequently there is always more or less difficulty in getting it carried out. When the master has himself a mechanical turn, there is no difficulty in getting the proper tools and in seeing to their proper use, but otherwise it is hopeless to make the attempt, in opposition to the trade, who would lose considerable sums by its general adoption.

Sect. 5.—Castration.

This is the operation of removing the testicles of the horse, and is now performed with great dexterity by our best veterinary surgeons, and with very little risk to the colt. It should, however, never be attempted by any one but the above gentlemen. It is generally performed upon the colt at

or soon after weaning-time; but in many cases, when the head and neck are not sufficiently developed, it should be deferred to the spring of the second year.

Sect. 6.—Ruptures.

Ruptures at the Navel are cured by passing a strong pin through the skin, and then winding some cord round it so as to produce inflammation and obliteration of the passage. But this should always be left to the regular practitioner.

Sect. 7.—Nerving.

Nerving is an operation done upon the nerves of the feet, by which they are divided, and thus those organs are rendered for the time insensible to pain. It is easily done by any one who knows the relative situation of the veins, arteries, and nerves; but no one who is not accustomed to the knife should attempt the operation.

Sect. 8.—Administration of Chloroform.

Chloroform may be given to the horse on the same principle as to the dog; and by means of a nose-bag it may easily be introduced into his system, by which he is rendered wholly insensible to pain. The same kind of apparatus as for the dog, but on an enlarged scale, will soon have the desired effect; but the veterinary surgeon should always have the control of so active an agent.

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